

CE

HORIZONS

FEBRUARY 1963

50 Cents

(\$.55 in Canada)



TWO-WAY RADIO FOR BUSINESS AND PLEASURE

FLASH!

The FCC on January 3, 1963 extended the January 15th deadline for Part 19 comments until February 28th.

See Inside.

General MC5 Sidebander

the measure of quality for all citizens band transceivers



The World's most advanced 11 Meter two-way radio

FREE—
Write for schematic
and complete
technical manual

3.25 watts minimum output. • Sideband receiver adapter* for single and double sideband reception. • New Zener Diode shunt noise-clamp and series gated limiter circuit for highest noise limiting ever achieved. • New ultra-low drift oscillators for unsurpassed stability. • New Hi-Level Tone-Signal. • Illuminated "S" Meter. • 6V, 12V, 115V operation. • 15 watt construction. • Net Price including microphone and crystal... \$199.95. • *Sideband receiver adapter optional \$19.95 + inst. Optional accessories available. 6 Volt or 12 Volt cord, each \$4.95. Crystal T or R, each \$2.95. 90 day warranty. F.O.B. Burbank, California.

Under present rules part 19.32 the FCC does not provide for more than (5) watt input in the Citizens Radio Service (26.965-27.225 MC Band).



General's SIDEBAND TRANSMITTER —Available February 15, 1963!

A new concept in C.B. Communications. A Sideband Transmission Adapter and AM Linear Amplifier all in one package...and best of all True Electronic Switching—Just plug it into the antenna. This unit may also be used on the 10 meter band at 50 Watts P.E.P. Sideband and 25 Watts P.E.P. AM with only 3 watts of drive.

This Dual Function...Sideband and AM Linear Amplifier for 10 and 11 meters is only \$99.95 Net. F.O.B. Burbank, California.

GENERAL

Announcing.....The rugged

General VS2



First vibration resistant, two-way radio.



DECEMBER WINNER OF GENERAL'S DRAWING
Mr. L. Jackson, Jr., KBA 0304
New Milford, Connecticut

- General Radiotelephone, already known and respected as quality
- leaders in the communications field, again prove themselves
- "years ahead in craftsmanship" in bringing you this compact
- two-way radio unit which has proven itself sturdy enough for
- outdoor use on all types of industrial and agricultural vehicles.
- VS 2 offers these special features at **no** extra cost:
- 1. Transistorized power with automatic short circuit protection.
- 2. Electronic switching—eliminates relay problems.
- 3. Microphone with coil cord and moisture proof cartridge.
- 4. Triple plated chassis—Copper, Cadmium and Gold Iridite.
- 5. Rugged black Vinyl cabinet finish.
- 6. Etched aluminum panel.
- 7. Designed especially for rough and tough service operation.
- Net price including microphone, crystals for one channel and
- 115 volt power cord...only \$139.95.
- General's VS 2, because of its **Vibration Rated Service**, will
- meet every outdoor requirement and can be used with utmost
- confidence on jeeps, tractors, fork lifts or on any type equipment
- needing rugged dependability.

RADIOTELEPHONE COMPANY

3501 West Burbank Boulevard, Burbank, California



OZZIE'S MAIL- BOX

Dear Ozzie—

CB has grown in popularity tremendously in the last few years, but here in Los Angeles are the only CB'ers that can claim our very own market! Note in the attached photo that there really is a 'CB Market'. The market is located in Glendale Avenue near Los Feliz Blvd. The owners of the market insist that 'CB' stands for 'Cracker Barrel' but we know better—don't we!

Harvey Woien, 11Q2088
Los Angeles, California



Harvey:

Seems to us that we saw the market soon after it opened in 1961. It's not down the street very far from one of the nation's largest CB manufacturers, General Radiotelephone Company, which makes it all the more suspicious!

Ozzie

Dear Ozzie—

CB Horizons is and has been the best of the CB publications for my money. Every article and advertisement is the object of close scrutiny. I would like to convey my thanks especially to your Jim Kyle for his prompt and courteous reply to my previous letter. I would like to criticize but one facet of your publication. **Layout.** It can be

very disconcerting to try to assimilate technical material outside one's field without constantly referring back to previous paragraphs. When the article is broken into three or four parts, this becomes annoying! Would it be possible to arrange each article so that there is not more than one break in continuity? This alone would make your already fine publication superlative!

Dr. Ward Turner, M.D. 8W2091
Lutcher, Louisiana

Doctor:

Yes sir — we do agree! See how you like the new layout that we are inaugurating with this issue.

Ozzie

Dear Oz:

I am a firm believer in CB Radio and I wish to get my two cents in about a recent conversation with a representative from a large two-way FM equipment manufacturer. These misguided people think CB has no future and that is the reason they are not building CB equipment. This particular representative called on me to talk about purchasing some of his low band equipment. In the course of our conversation we got to talking about CB radio, and he tried to tell me our service is only good for survey crews and others needing communications in the 1/4 to 1 mile range. Needless to say I told him that any day I couldn't talk 20 miles from one side of San Antonio to the other, I would be in bad shape. I finished my lecture by suggesting that this Company take another long hard-look at CB radio and what it can do for the modest equipment investment.

John Hudson, 9Q0026
San Antonio, Texas

John:

Bravo! However, I seriously doubt the company in question will ever invest in present day CB radio. For some time now this firm has maintained an office in Washington which catches the names and addresses of all applicants for Class D CB service. They use these names to flood you with mail after you file your Class D application, but before you obtain your license to operate. Their pitch is subtle and apparently only moderately effective. "Let us call on you with details on our company's Business Band radio equipment" they say. Have you listened to any of the high band (152-174) channels lately? And you think CB is crowded!

Ozzie

Ozzie—

I am interested in an all transistor (full power, 5 watts input) 3 way power (6/2 vdc, 115 vac) Citizens Band transceiver with a selective calling device. Do you know of a company that has such a unit in wired or kit form? If not, could you supply me with a schematic for such a transceiver?

Albert Wittenberg
Valley City, N.D.

Al:

The Hallicrafters Company, Chicago, Illinois has just what you want. They announced their brand new CB-5 transceiver in the January CBH, which features transistor operation, 3 way power supply (including a rechargeable supply) and an optional selective calling device. See their advertisement in this issue for the full story!

Ozzie

**TWO FOR
THE MONEY
ONE FOR
THE SHOW!**

**antenna
specialists brand**

NEW M-103

combination CB-AM antenna

Now, by combining superior communications experience and finest quality materials, Antenna Specialists brings you a truly functional CB-AM antenna . . . one that will dependably serve both citizens band and AM reception with optimum performance.

Beautiful, clean lines and heavily chromed, the M-103 is inconspicuous yet has that professional air about it.

Carefully peaked to top citizens band performance—operates superbly for AM reception too!

No buttons or switches. It's all done with Antenna Specialists' new automatic dividing harness. Operates by merely turning on the CB rig, the car radio, or both at the same time.

The center-loaded, cowl mount M-103 fits in the $\frac{7}{8}$ " to $1\frac{3}{16}$ " hole of the car radio antenna. Operating position 46"—telescopes to 31".

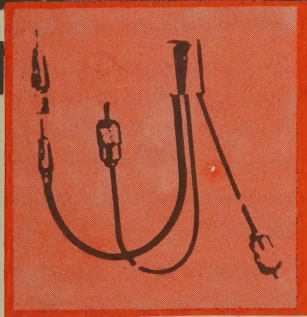
Automatic Dividing Harness

Fits under dashboard out of sight . . . three simple connections to make. 1' low loss cable to the AM set; a 2' cable to the CB rig; a 5' cable to the antenna.

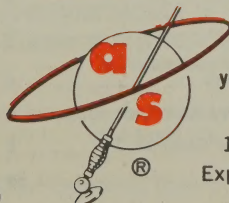
TO TEAM UP WITH THE M-103 MAGNUM 27 CB base antenna (27 Mc.)

Winds hate it—you'll love it—so will your neighbors

100 mph winds give up on this rugged, end-fed $\frac{1}{2}$ wavelength antenna. Yet it's slim and sleek in aluminum and steel . . . so very inconspicuous • 6 db. operating GAIN! • Easy to install on masting or side mount! • Inexpensive too!



Available separately as the M-104. Couples with our M-49, MR-49, or any ungrounded CB antenna requiring no more than 5' of cable.



your CB dealer has them in stock now, or write to
the antenna specialists co.
12435 Euclid Avenue, Cleveland 6, Ohio
Export Div., 15 Moore St., New York 4, N.Y.

HORIZONS

PUBLISHED MONTHLY, ON BEHALF OF THE CITIZENS BAND RADIO
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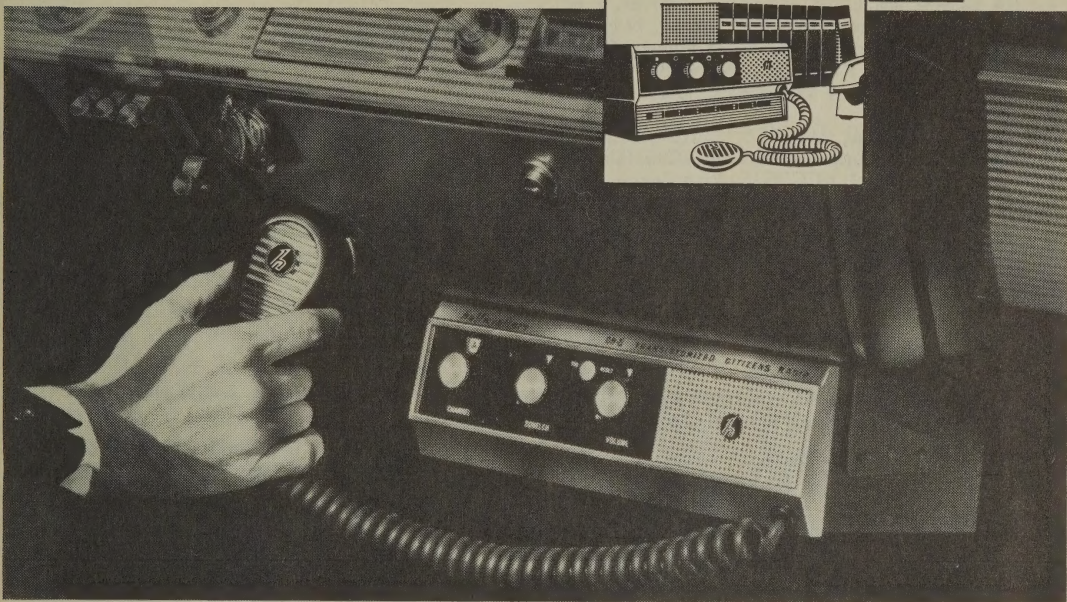
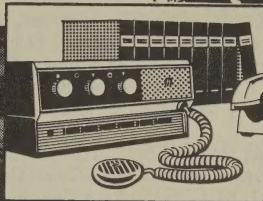
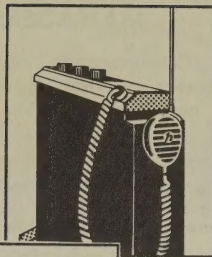
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Nothing fits all your CB needs like Hallicrafters' versatile new transistorized CB-5



Wherever and however you use citizens band, no transceiver made gets around with the effortless efficiency and consistent high performance of the new CB-5.

A fraction over 3 inches high, 10 inches wide and 8 inches deep, its 18-transistor design solves all normal space problems in mobile or airborne use. It has no vibrator of course, and you can operate it all day with less battery drain than it takes to start your engine once.

A slim, matching pedestal will furnish AC power for base operation. And for carrying between "stations," it weighs just 6¾ pounds.

For occasional portable use, an inexpensive 12-volt battery works out fine; but we've also designed a highly-efficient rechargeable battery pak accessory, in case you're serious about it. (There'll be a tone-coded squelch accessory, too, in the near future.)

Specifications? Here are a few: 5 watts in; 100% modulation capability; 6 crystal-controlled channels; 1 μ v sensitivity for 10 db. S/N ratio; 45 db. adj. channel rej.; PTT ceramic mike; 6 kc. selectivity at 6 db.; 18 transistors, 9 diodes, 3 instant-heat transmit tubes. Price: \$199.95; accessories optional at extra cost. For full details, talk it over with your Hallicrafters dealer or drop us a line.



the new ideas in communications
are born at . . .

hallicrafters
5th & Kostner Aves., Chicago 24, Ill.

Overseas Sales: Contact Export Department, Hallicrafters. Canada: Gould Sales Co., Montreal, P. Q.

CITIZEN COMMUNICATION MANAGERS

Citizens Communication Managers (CCM's) are volunteer reporters appointed one to a CB call area (2 in the 19th district) by CB Horizons to report on operating news and special events from their districts. CB Horizons welcomes inquiries from readers interested in becoming a reporter under the CCM program.

- 1-KBA CCM** G. W. Long, 1Q6002, Andover, N.H.
ACCM D. MacLeod, 1W8438, Dover, N.H.
W. M. Welch, 1Q5640, West Haven, Conn.
K. F. Knight, KBA5750, Warwick, R. I.
G. Michaels, East Woodstock, Conn.
- 2-KBG**
ACCM B. Endress, 2W9623, Clifton, N.J.
- 3-KCC CCM** C. Zubrzycki, 3Q1332, Chester, Pa.
ACCM Bobbi Steel, KCC0625, Pine Beach, N.J.
- 4-KCF CCM** G. W. Adkins, 4Q1018, Ocean City, Md.
- 5-KCI CCM** J. M. Robinson, Norfolk, Virginia
ACCM J. P. Setliff, 5Q2388, Goldsboro, N.C.
- 6-KDB CCM** D. W. Sanford, 6Q3944, Northport, Ala.
ACCM K. Chambliss, 6Q4462, Columbus, Ga.
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- 8-KEA CCM** R. M. Lord, 8W1494, Baton Rouge, La.
ACCM C. J. Easley, 8W2052, Jackson, Miss.
- 9-KED CCM** J. Hudson, 9Q0026, San Antonio, Tex.
- 10-KEG CCM** N. Johnson, 10W4389, Ft. Worth, Tex.
ACCM J. K. Abney, Jr., Marshall, Tex.
- 11-KEJ CCM** R. V. Watson, 11Q1125, Phoenix, Ariz.
ACCM J. Kinsey, 11Q5345, San Bernardino, Cal.
- 12-KFC CCM** D. Southern, 12Q3113, San Jose, Cal.
ACCM D. Tillery, 12Q1206, Concord, Cal.
- 13-KFF**
ACCM S. Harding, 13Q0901, Portland, Ore.
- 14-KFI**
ACCM F. Fechner, 14Q1295, Cashmere, Wash.
R. L. McChesney, 14Q1113, Saco, Mont.
- 16-KGE**
ACCM V. Tareski, 16W1728, Fargo, N.D.
- 17-KGH CCM** L. J. Woods, 17W5910, Evansdale, Iowa
ACCM P. Davis, 17Q2669, Dunkerton, Iowa
J. Leversee, 17W3361, Janesville, Iowa
M. J. Lewis, 17W4053, Joplin, Mo.
- 18-KHA/B CCM** R. E. Combs, 18B1711, Owensboro, Ky.
ACCM R. D. Cooper, 18A7297, Elkhart, Ind.
A. Hitchcock, 18W7805, Peoria, Ill.
T. F. Gillians, 18A1868, Evansville, Ind.
D. C. Wolcott, 18A4803, Cedar Rapids, Ia.
- 19-KHG/H CCM** (N) C. Wesser, 19A5006, Presque Isl, Mich.
CCM (S) V. Cuker, 19W9224, Mt. Clemens, Mich.
- 20-KIC CCM** J. Marshall, 20W8023, Canastota, N.Y.
ACCM L. Adams, 20W8441, Rochester, N.Y.
G. Goss, KIC1572, Hiller, Pa.

CB MEETING CALENDAR

The backbone of the Citizen Band movement in the United States is the series of CB jamborees, picnics, and conventions held throughout the year. CB Horizons urges that you attend such events when held in your area and, that you attend regular monthly CB club meetings. Have your club notify this department when special events are planned, for listing here.

A NEW SECTION WE WELCOME YOUR CONTRIBUTIONS

OUR COVER

The future of the Citizens Radio Class D Service is in your hands. Our Washington staff reports that today, as never before, the Citizens of the United States have taken a very real interest in the power vested in the hands of the FCC. The cause of the furor? The proposed changes in Part 19. Have you spoken your piece? Time is running out.

CB HORIZONS is published monthly, issued the 10th day of the month preceding the dated month of issue, by Horizons Publications, Inc., P.O. Box 1557, Oklahoma City 1, Oklahoma.

CB HORIZONS, the original magazine for Class D Radio Service licensees (established May, 1961), is circulated through the mails and over the newsstand at CB dealers and distributors to approximately 80,000 readers.

CB HORIZONS accepts bona-fide advertising from firms selling electronic units, components and services. Advertising rates and data available upon proper request.

CB HORIZONS is one of seven publications from Horizons Publications. Horizons Publications, Inc. is a privately owned stock corporation with no financial, physical or voting ties with any manufacturer of electronic units, components or services.

CB HORIZONS welcomes contributions and suggestions from its readers. Manuscripts contributed without benefit of prior solicitation cannot be guaranteed to be returned.

EDITORIAL



BOB COOPER, JR.—KEG2607

FEW AGREE WITH PART 19

It has been a busy 30 days. Since CB Horizons was rushed to the mails and newsstands 10 days *early* in December (so that everyone might have an opportunity to study over the proposed changes in Part 19 before the Commission's imposed 'comment deadline' of January 15), the phone lines at Horizons have run into overtime. So much so that the local office of Ma Bell has been by the office several times asking if we would like to add a few new lines to the 5 now in service!

Here's how things are shaping up. The first major 'comment' to be filed with the Commission came from the people in Benton Harbor, Michigan (The Heath Company). They liked the proposal, told the Commission they too had been working to 'eliminate the hamming type of activity on CB by moving such people to the amateur radio ranks'.

Another early comment filed had very little (if anything) to do with the actual Part 19 proposal. Filed by a group in Connecticut, it took to task the November 15th brief announcement from Horizons which *we* mailed to over 3,500 CB clubs, dealers and manufacturers! They don't like us. Not even a little bit.

In the interim we heard from CB clubs, manufacturers and individuals. Most of the manufacturers are filing comments of some sort. The comment filed by the people at Webster Manufacturing Company, (APELCO, Webster Whips, etc.), South San Francisco, California voiced the opinion of most and was concerned with the proposed section which would *eliminate* inter-licensee communication (i.e. talking from a unit of one licensee to a unit

of another licensee) on all but 5 already *sick* channels (12, 13, 14, 15 and 23).

The people at Webster feel that such a confinement is contrary to both the will of the public and the public's demonstrated interest in communicating between licensees.

Meanwhile the Commission itself was hardly sitting still. As if to bolster their own stand for severe and limiting regulations, they issued a 7 page brief calling for the license revocation (effective January 7) of station 15W1670, licensed to Ernest L. Walker, Espanola, New Mexico. This was more than a casual license revocation because Walker had warned the Commission that if it attempted to remove his authority to operate, he would fight the revocation to the highest court in the land and 'rot in jail' before he would succumb to their insistence that he stop working skip stations.

The Commission ordered Walker to cease all operations at 3 AM EST January 7th and turn his license in to the Commission. They cited numerous violations where he had admitted working skip and his "apparent unwillingness to abide by the law" as reason for the revocation. They threatened him with jail if he ever uses a Citizens Radio Service station again.

Walker replied by turning his license over to the Federal Judge in Santa Fe, New Mexico for 'safe keeping' *instead* of returning it to the Commission as directed, and, by preparing legal action against *each* of the seven commissioners individually and the Engineer in Charge at the FCC Monitoring Station in Ft. Lauderdale, Florida.

Continued—Page 17

With Deep Regret . . .

Upon reading the proposed modifications for Part 19 of FCC rules, my first reaction was that of anger. However, after carefully rereading these proposals, my anger turned to unabashed Shame.

Ashamed — that I, a small part of a great industry may be forced to become a part of a scheme that may mean the loss of Millions of dollars invested in equipment by “free” American Citizens.

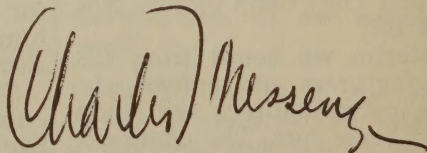
Ashamed — to think that any person or persons may, at will, alter, modify, impose or otherwise change any so called rule that is literally a Law without the Vote, Consent, Representation or other due process of the law as we the people know it.

Ashamed — that our elected government has seen fit to refuse the funds requested by the FCC to be used to assist this agency in working for us, the Citizens Banders.

Ashamed — that were it not for lack of manpower and funds to properly service this rapidly growing public service, that certain persons would not have instigated these proposals in order to intentionally discourage the use of, and thereby end the so called Citizens Band.

Frightened —to think that such actions may not end in the field of Radio . . . but perhaps the beginning of the end to our basic rights and personal liberties. And above all that instrument which is the greatest achievement conceived by mankind since the Holy Bible, The Constitution of the United States of America.

May the Good Lord Bless and assist those poor lost souls who have forgotten what Liberty means to us. I close extending to them and all of you SEASON GREETINGS.



Charles Messenger, 11W4165

Vice President,

GENERAL RADIOTELEPHONE CO.

AFTER TWO YEARS OF ANALYSIS AND STUDY...

Horizons Publications, Inc. wishes to announce the most extra-ordinary low-cost budget-priced subscription membership plan ever introduced in the field of publishing.

This announcement is so revolutionary that dozens of publishing firms around the world are sure to adopt this or a similar plan for their subscribers.

Horizons Publications welcomes in the new year by announcing the world's first **"Electronic-Library Service."**

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(A) **12 months of CB Horizons** (\$5 value)

(B) **The July 1963 CB Call-Book** (\$3.95 value) (Call-books will be issued twice per year from now on)

(C) **The September 1963 CB Radio Mobile Handbook**, 2nd Edition (\$2.95 value)

(D) ~~The January 1963 CB Call-Book~~ (\$3.95 value)

TOTAL COST (if purchased separately) \$15.85

With the completion of the Univac system your magazine will be processed every month from printer to post-office practically untouched by human hands! This greatly eliminates the chances of error and materially reduces our subscription handling costs. This saving is one that we are able to pass along to you with our brand-new (and completely unique in the publishing industry) **"Electronic-Library Service."**

Here is how it works. Horizons is now 99 percent completed in our change-over to a modern-day electronic age Remington Rand Univac(r) computer punch-card subscriber read-out system. This means that very soon every CB Horizons subscriber will have his magazine addressed **electronically** by Univac!

ELS is a 12 month plan just for you. It will provide you with all of your CB reading needs throughout the year. Every ELS Member will automatically receive the following, and all will be automatic and electronic in processing, thanks to Univac!

NOW

ELS member-subscriptions cost \$12.00 per year. BUT, you pay only \$4.00* upon joining. ELS will electronically bill you \$4.00 on May 1, 1963 and \$4.00 again on September 1, 1963. Your twice annual billing will include postage-paid return envelopes. In the meantime you automatically—and electronically—receive each of the 15 CB publications. ELS members will be mailed their copies first!

PLUS

The first 5,000 members of ELS will receive **absolutely free** a copy of the brand new Part 19 (revised) as soon as it is made final by the FCC. This costs a minimum of \$1.25 from the FCC and is required reading for all Class D radio operators. This is our **free** gift to the first 5,000 members of ELS!

BECOME AMONG THE FIRST TO JOIN THE EXCLUSIVE HORIZONS ELECTRONIC LIBRARY SERVICE—AVAILABLE TO CB HORIZONS SUBSCRIBERS AND NON-SUBSCRIBERS ALIKE! TURN THIS CARD OVER FOR REGISTRATION FORM! DO IT TODAY—DON'T DELAY!

Annual ELS Member-shipment is \$12.00 per year. First year member-shipment fee is \$12.00 plus \$1.00 registration fee. First year total—\$13.00.

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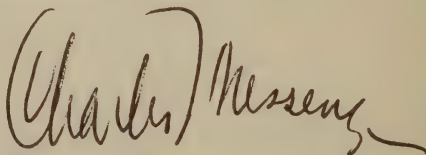
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PLUS

The first 5,000 members of ELS will receive **absolutely free** a copy of the brand new Part 19 (revised) as soon as it is made final by the FCC. This costs a minimum of \$1.25 from the FCC and is required reading for all Class D radio operators. This is our **free** gift to the first 5,000 members of ELS!

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THE CITIZENS TELEVISION SERVICE

by
Leo G. Sands
The Hammarlund Mfg. Co.
New York, N. Y.

Two new, uncrowded Citizens Bands are being planned. When equipment for these new bands become available, any citizen will be able to set up his own private microwave system. Not only will he be able to talk from point to point, but he will be able to see the person he is talking to!

The new Citizens Bands, which have not yet been formally announced by the F.C.C., are the 17,700-19,300 mc and 19,400-19,700 mc bands. Together, the two bands represent 1,900 mc of band space. The present 27-mc Citizens Band covers only 0.29 mc (290 kc)!

At these super-high frequencies (SHF), hollow rectangular pipe, known as plumbing, is used for tuning. Conventional coils and condensers won't do. Instead of regular types of tubes, special tubes known as Klystrons are required for generating SHF radio signals.

Instead of a wire or whip antenna, a parabolic reflector or horn antenna is used for concentrating the radio signal into a narrow beam. At these frequencies, radio signals act much like light beams.

To establish a two-way CB television link, the antennas of the two stations must actually "see" each other. If a line-of-sight path does not exist, the antennas may look at each other through radio beam mirrors, known as *passive reflectors*. Or, a pair of parabolic antennas, connected back-to-back, may be used as a passive repeater to route the radio beam around obstacles between the two stations of a link.

Each station consists of a microwave transmitter and a microwave receiver, both operating simultaneously. Two frequencies are required. Station A transmits on f1 and station B receives on f1. Station A receives on f2 and station B transmits on f2. Since each station transmits and receives on a different frequency, the same antenna may be used for simultaneous transmission and reception.

The circuitry of the transmitter is much *simpler* than a 27-mc Citizens Band transmitter, but its components are more expensive. A single Klystron tube, as shown in Figure 1, is used as a self-excited oscillator which generates the signal to be transmitted, and which is frequency modulated by varying the voltage on the klystron's repeller.

The FM output of the klystron is fed through an isolator and an antenna diplexer into the antenna. The isolator prevents the antenna from affecting the tuning of the klystron. The diplexer routes the transmitter signal into the antenna feed horn. And, the antenna reflector concentrates the radio energy into a narrow beam, causing the radiated energy to be magnified hundreds of times.

The receiver employs a simple superheterodyne circuit. The incoming signal (f2), which is magnified hundreds of times by the antenna, is fed through a tuned waveguide filter into a crystal detector mixer. Here, the incoming signal and a local oscillator signal (f3) from a second klystron are mixed together to form an intermediate frequency (f4). This new frequency (f4) is fed through an IF amplifier and a limiter to an FM discriminator.

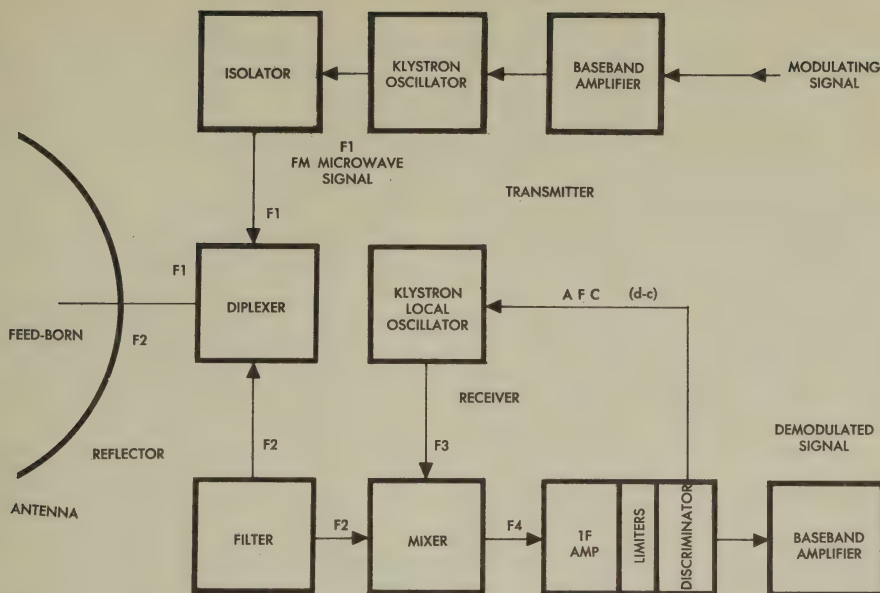


FIGURE 1
BLOCK DIAGRAM
MICROWAVE TERMINAL

For single voice circuit communication, the output of a microphone is fed through an amplifier to the repeller of the transmit klystron, and the output of the discriminator is fed through an amplifier to a loudspeaker.

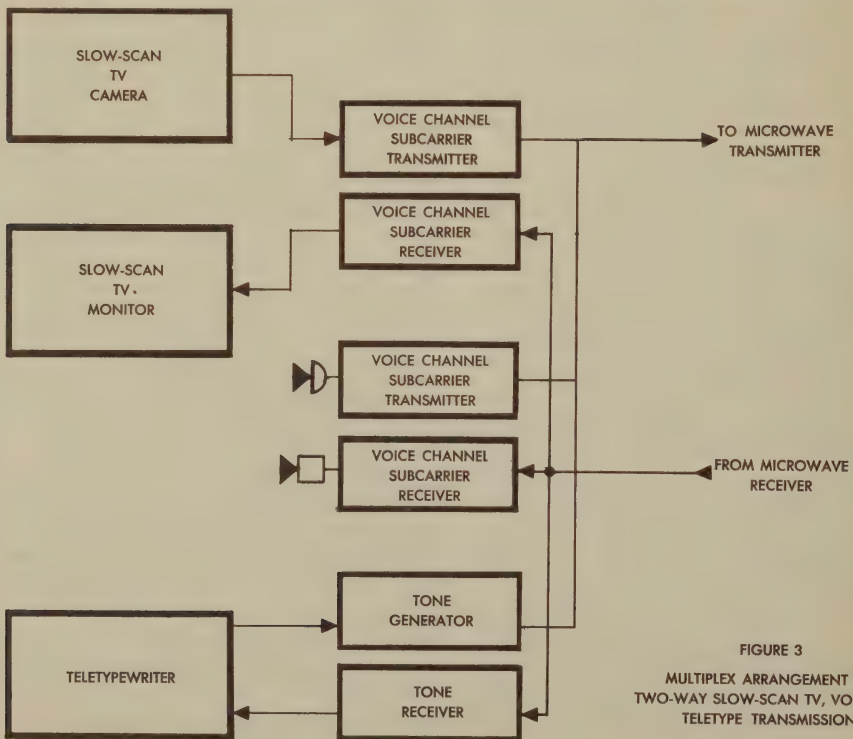
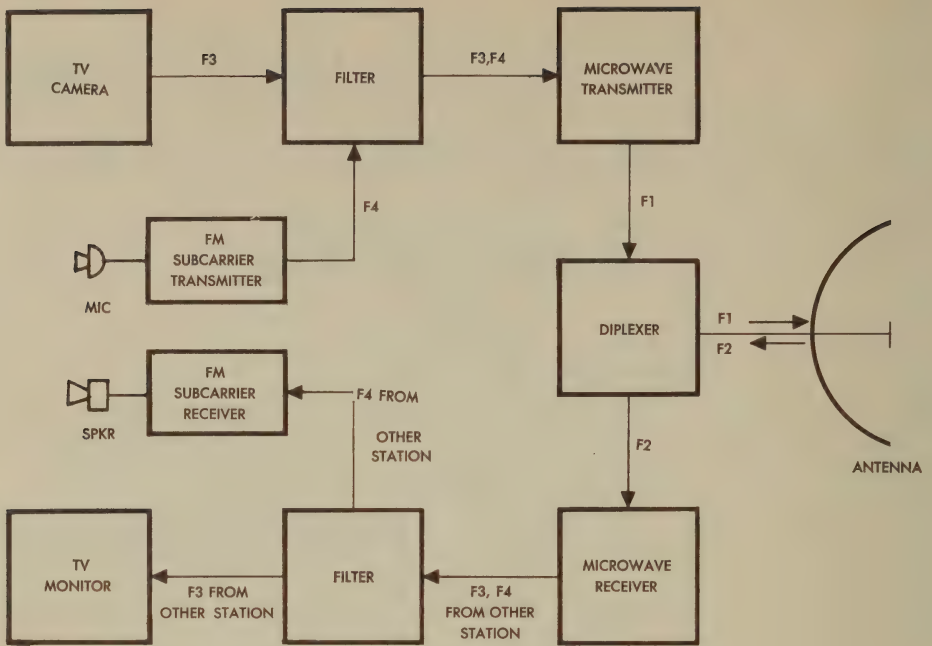
However, the bandwidth of the equipment can be so great that a *large number* of voice channels can be transmitted simultaneously. Each voice channel is fed to the microwave equipment through what is known as *carrier telephone multiplex*. Each multiplex channel consists of a low-power transmitter and receiver operating at a frequency between 4 kc and 2800 kc. When single sideband multiplex is used, each voice channel occupies less than 4 kc of band space. Many voice channels can be stacked (each at a different frequency) and fed into the microwave system.

While some prospective CB microwave users may have need for several voice channels, most will not. Instead, they will probably want a two-way TV channel and a two-way talking channel.

The output of a closed-circuit TV camera can be fed into the microwave transmitter as shown in Figure 2. The TV monitor is connected to the microwave receiver output. The voice channel consists of an FM subcarrier transmitter and an FM subcarrier receiver at each microwave terminal. The TV signal occupies most of the microwave transmission band up to about 8 mc. The FM voice channel operates at a frequency above 8 mc, above the video signal.

Since "live" closed circuit TV equipment is still expensive, some prospective CB microwave users will be willing to settle for "slow-scan" TV. This kind of equipment, now being developed, is capable of displaying still scenes and slow-moving views on a long persistence cathode ray (picture) tube. While live TV requires several megacycles of band space, slow-scan TV can be transmitted over a 3-kc voice channel as illustrated in Figure 3.

Besides TV, CB microwave can be used for transmitting Teletype mess-



ages and facsimile. Written information may also be transmitted as it is being written by using an Electro-Writer or Telautograph machine.

Microwave equipment for the Citizens bands is *not* yet on the market. As soon as there appears to be sufficient demand, equipment manufacturers can be expected to start producing this kind of equipment. The main deterrent is cost. At the present time, klystron tubes for this band cost more than \$100 each. If mass produced, their cost should drop drastically.

Since the performance standards and reliability requirements of CB service will be lower than for commercial microwave systems, less costly equipment can be utilized. Among the cost savings ideas being considered is a super-regenerative receiver which would employ far fewer components than a superheterodyne receiver. Tunnel diodes are being considered as substitutes for klystrons. Since small-diameter antennas will suffice at 16,000 mc, a high tolerance dishpan, made of metal or metallized plastic may suffice as a reflector.

Microwave systems now in service operate in the 960-mc, 2000-mc, 4000-mc, 6000-mc, 8500-mc, 10,000-mc and 12,000-mc bands. Frequencies below 10,000-mc are reserved for use by telephone companies, railroads, pipe lines, power companies and other organizations requiring long-haul systems. The 12,000-mc band, for which equipment is now available, may be used by all kinds of business enterprises, but for *business* purposes only. CB type operation is limited to frequencies above 16,000 mc.

Channel 24—Continued

da, which 'turned him in' for working skip.

Walker has been working on a program that he told Horizons would culminate on January 9 (when Congress opened) by flooding Senators and Representatives with more than 70,000 requests to have the Commission investigated as to the reasoning behind *their apparent lack* of interest in 'the interest of the public' with regard to the proposed Part 19 changes.

Here closer to home a few (very few, fortunately) members of the industry have disagreed with both our stand on the Part 19 Proposed Changes (I didn't know we *had* taken one, except to urge interest on the part of our readers) and, our handling of the January issue.

We have now disagreed with many of the sections in the proposal, and we stated this in *our* comments on the proposal, which we filed on December 7th (no connection with Pearl Harbor Day). Because of our disagreement with the proposed changes (two or three manufacturers *suggested* we should 'keep quiet and play down the entire proposal') we have been told in no uncertain terms that we won't see any more of their advertising money.

Read for yourself a representative sampling of the Part 19 comments, as filed by both industry, and CB users, starting on page 40.

NEW LOOK—

They say that imitation is the sincerest form of flattery.

We haven't been flattered. The first six issues of a new CB magazine circulated along the eastern seaboard looked so much like CB Horizons, from the opening of the cover and the two page advertising spread, through the letters column, table of contents, feature articles and placement of both articles, advertising and columns, that we began to wonder if we are the only people in the business with any originality.

Even the articles reminded us of something we had seen in back issues of CB Horizons.

When readers of brand Y's CB magazine started addressing their mail to us, we decided that it was time to separate the men from the boys.

The men have come up with a new format and 'inner' look for CB Horizons. It is designed from stem to stern to be more readable, usable and durable. If you are an old time reader you will probably have a few anxious moments looking for the regular columns in new spots.

From now on the only 'big switch' you will be hearing about will be the on-off control on the other fellow's rig.

KEG2607

AUDIO-ABILITY

STAFF

To any newcomer in CB, the many electronic phrases that are tossed so glibly around the channels must seem baffling indeed.

One of the most often used and least understood is 'modulation.'

Modulation is the process of applying audio (or voice) intelligence to a radio frequency signal. Back in high school most of us learned that the audible spectrum (i.e. the range that our ears could detect) runs from around 50 cycles per second upwards to 15,000 cycles per second. We also learned that very high pitched notes, above 15,000 cycles per second, can be detected by high frequency *ears* known as radio receivers. What's more, these ultra high pitched sounds can be generated by high frequency *vocal cords* known as radio transmitters.

Aside from a few technicalities, then, radio frequency receivers and transmitters are much like our own ear drums and vocal cords.

In our day to day living, we know people who 'don't speak up.' They are hard to understand because they don't speak loudly enough, or tend to slur their speech.

Engineers will tell you that such people don't *modulate* properly. They are not making full use of their vocal cords.

In our every day operation of our CB transceivers, we frequently hear transmissions from stations who likewise do not seem to be *modulating* sufficiently. Their transmissions are weak and tend to be muffled, even though they should be loud and clear.

Unfortunately, adjusting the modulation in a CB transmitter is usually

not as simple as merely speaking louder. As a matter of fact, it is illegal, under Part 19 Rules and Regulations, for *you* to adjust the modulation level of your transmitter. Only those individuals with the proper FCC issued first or second class radio telephone or radiotelegram licenses may make modulation adjustments to Class D CB radio transmitters.

None the less, there are as many improperly adjusted modulation systems in CB transceivers as there are properly adjusted ones. In fact, the odds are good that your own transceiver(s) is not working to full 100 percent modulation capability.

One of the ways of getting around the present interpretation of Part 19 regulations concerning modulation adjustment is to add a speech amplifier, with gain control, at the microphone. *Instruments and Communications*, Wilton, Connecticut did this most recently with their 'Big Mike', a microphone with a built-in audio (voice) pre-amplifier. One year ago *Elenco* of Wabash, Indiana introduced a speech compressor to the CB field which incorporated both speech amplification and compression into a single unit which wired in between the actual microphone and the audio amplifier that is in the transceiver.

Over the course of the past year, since CB Horizons first reported on *Elenco's* unit in print, we have received more letters dealing with audio problems than perhaps any other CB topic. Everyone, it seems, wants a well modulated signal.

But—is it worth the time, effort and expense, to add an *Elenco* Speech Com-

pressor, Big Mike or other unit to your transceiver?

To learn the answer to this question, the CB Horizons Lab has been conducting a long exhaustive series of actual tests, carefully recording the results in tabular form.

TEST METHODS

A fancy-dan laboratory can measure the *shape* of a modulated signal on expensive oscilloscopes, compare high frequency tones versus low frequency tones, determine the amount of communications punch a particular transceiver has and generally get wrapped up in technical terms that only *other* engineers understand.

CB Horizons has such a lab. But we don't believe in producing results in this manner. We recognize that our readers are seldom technicians and rarely engineers. Most CB'ers are people who simply want the best communications system for their money.

With this in mind we wired an Elenco Speech Compressor into a Metrostar transceiver installed in a mobile (Elenco has a 12 vdc version which we used in this case) and wired a 115 vac version of the same unit into a Brown-ing 23 S/9 base station transmitter.

Regardless of whether you are on base or mobile with the Elenco, the unit is adjusted in the same manner. Five controls on the Elenco allow the user to adjust the audio gain from the microphone into the speech compressor, as well as audio gain out of the unit into the transmitter, and compression of the voice into a number of volume ranges. It takes a modulation meter to measure the output of the unit and to set it up properly. Once set, it should be left alone and the controls taped into a fixed position.

Another test set-up included Big Mike wired into an inter-changeable microphone plug which allowed us to switch Big Mike (which merely replaces your existing microphone) from transceiver to transceiver.

Finally CBH Technical Editor Jim Kyle performed *surgery* on three separate production model transceivers which had varying amounts of modulation present. Jim changed audio coupling condensers and raised plate voltage on modulator stages to raise



Elenco on Test Unit

the amount of modulation possible with the three units.

All of this was done for one purpose. Manufacturers of CB transceivers set their transceivers so they cannot, under any circumstances, exceed 100 percent modulation.

This usually results in an *average* modulation level of from 35 to 75 percent. Since it is the average modulation level that gets your voice and message through when the receiving conditions are noisy, we were interested in *raising the average modulation level* to as high a value as possible without exceeding 100 percent on voice peaks.

TEST PROCEDURES

The procedure was simple enough. Simply run the mobile unit out to a point some 22 miles away from the base station, where signals were just beyond the reach of being readable using normal factory run transceivers. Then switch in the various modified units and the units which had Big Mike or the Elenco Speech Compressor added. Record on tape the results and bring the tapes back to the lab for analysis. The chart accompanying this report tells the story. Chart number two shows the same tests run under the same conditions with one change—all the results on chart two are from a period of testing when skip conditions were heavy and interference was next to intolerable.

CONCLUSIONS

Ten different types of transceivers were analyzed during the test. Three of these were capable of reaching or exceeding 100 percent modulation when you whistled into the microphone.

Only one was capable of 100 percent average modulation when you talked into the microphone. This same unit had whistle peaks of 120-130 percent. This unit was eliminated from any further participation in the testing program since it already had all of the modulation it needed, and then some!

Of particular interest was the actual extension in range you could get by switching a Metrostar transceiver from normal to Metrostar *plus* Elenco Speech Compressor. On a series of runs to our test point 22 miles from the base station, the stock Metrostar could not be read beyond 16 miles from the base. Switching the Elenco into the circuit added six miles to the mobile's range.

A similar test with the same mobile installed unit with a woman operator had different results. The stock unit lost readable contact with the base at 14 miles although a switch to the Elenco restored contact quickly and maintained it out to the same 22 mile test point. The female voice, lacking the depth and amplitude (strength) of modulation was quicker to drop below a level of readability. The same mobile unit with 'Big Mike' connected into the circuit, for the woman, at the 14 mile point where the base unit lost contact, quickly restored contact with the base. With 'Big Mike' plus the Metrostar, contact was maintained out to the 22 mile point. On the other hand, with the male voice operating the mobile unit, starting at the previously mentioned 16 mile male voice drop off point, the addition of 'Big Mike' helped only out to 20 miles. The last two miles to the test spot were rough at best.

The reason for the better response of 'Big Mike' to the female voice, with this particular transceiver, can be traced to two things. First of all, the Metrostar audio circuitry is apparently peaked high in the audio range. It responds and modulates better with a female voice, *especially when the female voice has been amplified* before it reaches the Metrostar. 'Big Mike' does this by giving the operator both gain control and *tone* control. It's the tone control that we adjusted to favor the female voice and which made the extra range possible.

All of which points out a fact that must be kept in mind when dealing

with any audio improvements in your transceiver. A commercial unit, such as Big Mike, or the Elenco Speech Compressor, is designed to compensate for differences in human voices. However, since every transceiver manufacturer has a slightly different approach to the actual design of his audio circuits, an Elenco on Brand "X" will not necessarily give the same results as an Elenco on Brand "Y".

Nor will either the Elenco, Big Mike, or any of the other units on the market, perform surgical wonders on an ailing transceiver.

Audio is tricky stuff. But, unless you happen to own one of the very few units which actually gives 90-100 percent *average* modulation when you talk into the mike (not whistle), you can get very worthwhile improvement in your communications' range by doing a little audio engineering. Leave the actual work to a qualified and *licensed* first or second class licensee, however, and you will have the assurance that a real improvement—not a step backward—has been made.

Where To Obtain Audio Units

A number of audio accessory units are available on the CB market. Some are audio amplifiers only, some are audio amplifiers with clip-pers added, and the more exotic ones feature audio shaping-compression as well as audio amplification.

**Instruments and
Communications, Inc.**
33 Danbury Road
Wilton, Connecticut

'Speakeasy' audio compressor unit with adjustable audio-preamplifier control and compression in or out switch. Mobile or base units. \$34.75 wired.

Demco Electronics, Inc.
Bristol, Indiana

Demco Power Modulator with speech compression at microphone. Limits maximum modulation level to 100%. Front panel in-out switch and amplifier gain control. \$49.95.

Electronics Engineering Co.
Wabash, Indiana

Audio compression amplifier with

Continued—Page 28

Chart One
PERCENTAGE READABILITY VERSUS DISTANCE

Distance—Statute Miles	3	6	9	12	15	18	21	24	Comments
Metrostar	100	100	95	90	50	20	10	5	Female Voice Best
Metrostar + Elenco	100	100	100	100	95	90	80	50	
Metrostar + Big Mike	100	100	100	95	90	80	65	35	
Johnson	100	100	100	95	70	50	30	15	
Johnson + Elenco	100	100	100	100	100	95	85	65	
Johnson + Big Mike	100	100	100	100	95	90	80	50	Good (50 % or better) to 27 miles
General MC-5	100	100	100	100	95	90	80	65	
Browning 23/S-9	100	100	100	100	95	90	80	50	Good (50 % or better) to 27 miles
Browning 23/S-9 + Elenco	100	100	100	100	100	100	90	75	
Sonar Model E	100	100	100	95	70	50	30	15	Good (50 % or better) to 31 miles
Sonar Model E + Big Mike	100	100	100	100	95	90	80	50	

Chart Two (Skip Conditions)
PERCENTAGE READABILITY VERSUS DISTANCE

Distance—Statute Miles	3	6	9	12	15	18	21	24	Comments
Metrostar	100	100	70	40	20	0	0	0	Detectable at 27 Miles
Metrostar + Elenco	100	100	95	65	45	25	5	0	
Metrostar + Big Mike	100	100	90	55	25	0	0	0	
Johnson	100	100	95	60	40	20	0	0	
Johnson + Elenco	100	100	100	80	60	40	15	0	
Johnson + Big Mike	100	100	100	75	50	30	0	0	
General MC-5	100	100	100	80	60	40	10	0	
Browning 23/S-9	100	100	100	80	50	30	0	0	
Browning 23/S-9 + Elenco	100	100	100	100	80	65	50	30	
Sonar Model E	100	100	95	60	40	20	0	0	
Sonar Model E + Big Mike	100	100	100	75	40	30	0	0	

CB BEAMS

PART ONE

Newcomers to CB probably wonder from time to time "what is a beam for?", "what does it do" and "how well does it do it?"

Recent survey of CB Horizons readers indicate that approximately 1 CB'er in 250 uses a form of beam antenna. Another 5 out of the same 250 are thinking about procuring a beam antenna.

Are these six CB'ers out of every 250 (or 24 out of a thousand) a 'little more nuts than the rest' or is there a method to their 'madness'? Both are probably true.

Beam antennas are hardly new. Most beam antennas are of the *yagi* design. Another form appearing in the CB world but not yet popular outside the CB world is the weird spider type array under such trade names as the Gizmotchy.

All beams accomplish essentially the same thing. They concentrate your power in a given direction. A beam consists of the radiator element (which is essentially a dipole antenna $\frac{1}{2}$ wavelength long), and one or more *parasitic* elements. A parasitic element can be likened to a parasite . . . that is a leech! It is a part of the system because of its proximity. It is not directly connected to the transmitter however.

A parasitic element may be a *director* (that which directs) or a *reflector* (that which reflects). Two element beams (rare in CB) have the radiator ($\frac{1}{2}$ wave dipole) and either a reflector or director. Three element beams (common in CB) have the radiator plus a reflector and director. Four element beams have a radiator, a reflector and two directors. Five element beams are

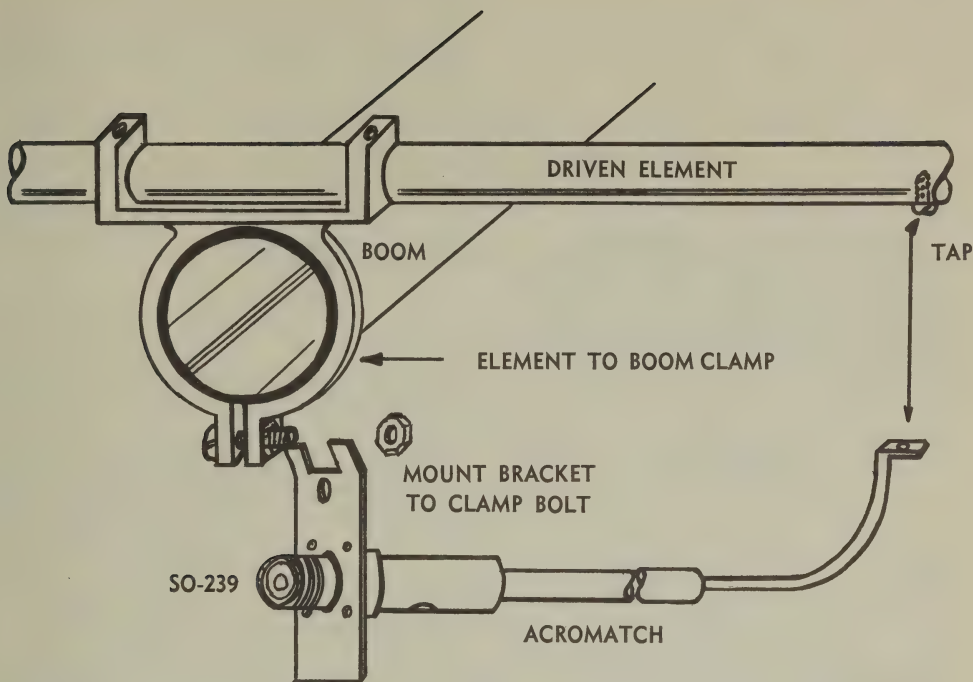
four element beams with an additional director.

Now, what do the parasitic elements do? First let's look at the basis for the beam antenna—the radiator.

The radiator, as has been noted, is a $\frac{1}{2}$ wave device, or a dipole. The length of the radiating element approximates $\frac{1}{2}$ of an actual wavelength at 11 meters. On channel 1 this is around 17 feet 7.5 inches. On channel 11 the length drops to 17 feet 6 inches. At channel 23 we have dropped to 17 feet 5 inches.

Most beam designs inter-connect the coaxial cable through a matching device to the radiator. The purpose of the matching device is to find a point out from the center of the $\frac{1}{2}$ wave element where the connection impedance of the beam is 52 ohms. In other words in our 52 ohm system we are interested in getting the antenna to match the RG-8/U or RG-58/U coaxial cable and at the other end, the transmitter's 52 ohm output. Unless all three elements of the system (the antenna, the feed-line and the transmitter) are of the same impedance, we will not have a good transfer of the transmitter energy to the antenna. A *mis-match* shows up as a high standing wave (reflected power) ratio and is an indication of power.

When we add a single parasitic element to the beam, we must make a choice between adding a reflector or a director. A reflector, remember, reflects energy. It is physically and electrically longer than the radiator. It goes *behind* the radiator on the antenna boom. Its purpose is to keep signals which approach the antenna



Cesco's 'Acromatch' matches the beam to the 52 ohm transmission line

from one direction from reaching the radiator. By acting as a *shield* for the radiator, the radiator element is able to pick up signals in a desired direction with greater strength than those from an undesired direction. The beam is oriented so as to place the reflector *between* the radiator and the non-designed station or stations. It helps the radiator, then, by cutting *down* on the non-desired signals. This raises the ratio of the desired signal strength to the undesired signal strengths and thereby makes the desired signal more readable.

The effect of the parasitic reflector element is to slightly de-tune the matching of the radiator element. This necessitates shorting the radiator element slightly and some readjustment of the matching section. Although the reflector element is not directly connected to the radiator, it does then have a de-tuning effect on the radiator.

Now let's add a director element to the two element beam. The director is shorter than the radiating element

by approximately 8 percent (see table 1). This allows signals to *slide* over it and pass on to the radiator (dipole). The reflector, meanwhile, is still keeping signals from approaching from the rear or nondesired direction. The addi-

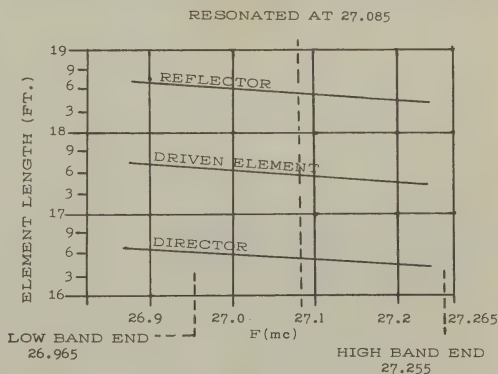
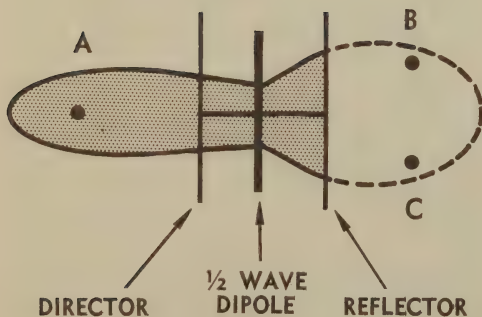
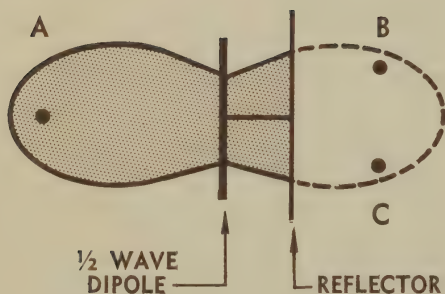
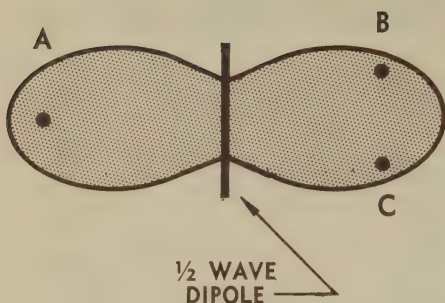


Table one

tion of the director actually improves the directional pattern of the beam (diagram 2). Because it *pulls* the forward lobe of the signal, from the radiator, into a tighter front wedge, it actually adds gain to the antenna. This

DIAGRAM 2



results in a further enhancement of the signal from the desired direction. This enhancement of the forward direction signal when now *compared* to the degradation of the signals from the rear (undesired) of the antenna means an even greater ratio of the signal strength. Now the desired signal, from the front of the antenna, is considerably improved over the original signal level of the desired signal. Diagram 2 tells this story.

Here we see that we started with a $\frac{1}{2}$ wave vertical antenna. In our case it consisted of a $\frac{1}{2}$ wave dipole, but the reaction of the dipole to the signals is identical to the reaction of a ground plane, etc. vertical antenna.

Next we added a reflector. This cut down signals A and B, but had very little effect on signal C. However by decreasing the strength of signals A and B, the ratio between A-B and C improved, thereby making signal C more readable.

Finally we added a director element which narrowed the front lobe pattern on the antenna. This produced a measure of gain for the desired direction, towards signal C. This further increased the ratio between signals A-B and signal C, making signal C even more readable.

Now we simply mount the 3 element beam on a rotating mast and point it in the direction of the desired station or stations.

The end result is an antenna system with gain and the ability to create improved signal to, signal ratios when working with contacts under skip or crowded local activity.

A beam then is a luxury. However with the ever increasing amount of activity on the CB channels, it is rapidly becoming closer to becoming a necessity. The fact that it affords the ability to distinguish between signals on the same channel, by merely pointing the antenna towards the desired station (and thereby rejecting or decreasing the undesired signals) is a powerful argument for the use of beam antennas.

Next month we will discuss stacking two three element beam antennas for greater gain and an even sharper forward antenna pattern.

MINI-MIKE

— A ONE EVENING PROJECT —

CB'ers interested in getting maximum range from their transceivers know that audio makes *all* of the difference. A weak-modulated set hasn't got a chance in the world of consistently cutting through skip, ignition noise or local interference.

Having recently completed a series of range-tests using four *stock* (from the manufacturer) transceivers, CB Horizons is more convinced than ever that many of transceivers can be improved upon when it comes to audio or modulation.

Let's face it. CB transceiver manufacturers must live under the regulations of Part 19. To do this they must keep their power input at 5 watts, their audio at 100 percent *maximum* and their crystal tolerances within .005 percent. The crystal tolerance and the 5 watts input are easy to maintain. The 100 percent audio maximum is not. Because every human has different voice characteristics, the transceiver manufacturer is forced to assume that the man or woman who ultimately ends up using the transceiver will have lots of *personal* modulation. The manufacturer must set his audio level so as to not exceed 100 percent with the loudest most modulated voice that is ever apt to use the unit.

This means that if *you* do not have this so-called ideal voice, *your* transceiver will never have a high level of modulation when *you* are using the set. Not *unless* something is done to bring the audio level up and to a point where your rig and your microphone *plus* YOUR voice equals 100 percent peak and between 80 and 90 percent *average* modulation.

The Mini-Mike does this. So does the Gould pre-amp described in the March, 1962, issue of this magazine and re-described on page 5-5 of the CB Radio Mobile Handbook. So do several commercial units.

But the Mini-Mike differs from all other pre-amp units in one important respect. All others require a power source. The Mini-Mike does not!

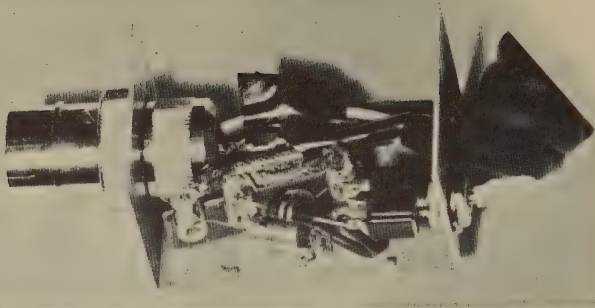
The exact reasons why the Mini-Mike can do without a battery or other power source are most complex and complicated. In over-simplified terms, the Mini-Mike takes its operating power directly from your voice.

Only three components are required: a transistor, a resistor, and a capacitor. In addition, we put the Mini-Mike in a chassis box—the smallest we could find (LMB No. MOO). We did this so that we could incorporate the Mini-Mike as a part of the mike plug which plugs into your transceiver.

If you do not have a detachable mike plug on your unit, we suggest that the small LMB chassis box be mounted to the transceiver at the point where the mike cord goes into the rig (front panel or back of chassis), as if it were actually on the plug assembly as the photo shows.

If you have a detachable microphone (using one of the more common varieties of plug-in male plugs), this will allow you to take the Mini-Mike amplifier with you when you change transceivers.

The entire circuit *could* be wired into your transceiver between the microphone jack on the back of the panel of your unit and the input to the first audio stage.



LOOK MA-NO BATTERIES! In fact no power at all. Just a single transistor, a single resistor and a single capacitor and you are in business with an audio pre-amp. Extensive field testing at Horizons indicates the DS-25 pre-amp nets a combination of clipping gain (approximately 8 db) and audio amplification (5-10 db gain) with the component values shown. This circuit is akin to 'sound-powered' transmitters released some years ago with some unusual twists. Experimenters should have a ball playing with this one. Viva la transistor!

The circuit is very basic. A Delco DS-25 transistor is a voltage amplifier. The base of the DS-25 (which corresponds to the grid in a vacuum tube) takes the output from the microphone element. The emitter is grounded. The collector is your output. The collector is identified by a red mark on your DS-25. Orient your transistor so the red dot lead (collector) is in the same position as the accompanying schematic shows the collector lead. The emitter will then be down page from you and the base will be to your left.

The point at which the Mini-Mike differs from *all other* transistor voltage amplifiers is that the "hot" end of the collector resistor is also grounded. In most units, this resistor runs to a battery.

The 5 mfd Coupling Capacitor from the collector to the mike (hot audio) lead to the transceiver audio input determines the audio response of the unit. The 5 mfd value is best for most average voices. However you may find that with *your* voice a smaller value capacitor will be best. Values down to as small as .05 mfd work. This will best be determined by tests once the unit is working.

The positive side of the capacitor connects to the center lead of the microphone plug itself (the hot lead, or the one that originally went to the mike element itself).

CONSTRUCTION

The holes for mounting the parts in the LMB MOO chassis box are prepared first. As the photo shows, the mike plug which actually enters into

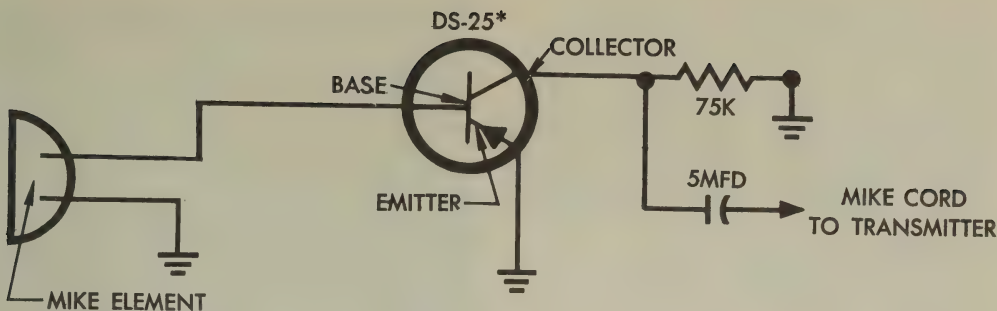
the transceiver is detached from the transceiver. A hole the size of the outside diameter of the plug is drilled in one end of the chassis box and the plug actually mounted (threaded end) through the hole. This makes the plug and the chassis box an integral unit. Next we drill a hole the size of the diameter of the mike cord in the opposite end of the chassis box. The mike cord will feed through this hole, from the mike itself.

The box comes apart in the shape of two giant 'U's. Nothing mounts in the top section of the box.

Back on the base side of the LMB box now, we drill a $\frac{1}{8}$ inch hole $\frac{1}{4}$ inch in from the edge, at the center. Through this we drop a 4-40 machine screw and mount a three terminal tie point. The three terminals provide all of the necessary tie points for the wiring of the DS-25 transistor.

Start your wiring by cutting the mike cord approximately $1\frac{1}{2}$ inches down from the mike plug. Now you can thread the plug onto the chassis box (as shown), securing it there with the cap-nut that originally held the shield cap on.

Next trim back the insulation on the mike cord for approximately $\frac{3}{4}$ inch. Do the same on the free end of the mike cord, going to the mike itself. After locating the hot (audio) lead (usually the red wire) from the mike element, carefully solder the switching wires (usually black and white) and the ground wire (usually a piece of shield wire) back together with the cord going to the microphone itself. Tape (in-



*SEE TEXT

sulate) these soldered connections and tuck them down out of the way. The only lead remaining is the lead which comes down the cable from the microphone element and the same lead which connects through the plug end into the transceiver. This lead is the one which connects to the transistor base (see diagram) as it comes down



This is the actual lab developmental pre-amp that this article is built around. Overlook (please!) the butchered chassis box and the haywire connections. We thought you might like to see how a unit is developed in the Horizons lab.

the mike cord, and, (on the plug side) to the 5 mfd capacitor at the collector of the transistor.

Now follow the wiring diagram and we are in business!

PROBLEMS

You should experience no trouble with the unit if you follow the parts

layout approximated in the photos and the wiring diagram.

If you experience audio oscillations with the Mini-Mike added to your unit, try inserting a .01 mfd filter capacitor at the mike plug inside the set. Do not put a filter capacitor on the audio output lead. If this does not cure the oscillation, use a 100 K ½ watt resistor at the mike plug where the audio from the mike enters the set. If all else fails, reduce the size of the 75K resistor until oscillation stops.

Happy CB'ing!

UNIVERSAL S-METER FEEDBACK

When we goof, we goof good! Take the article 'Build This Universal S Meter' appearing on pages 18 and 20 of our October 1962 issue. The tail end of the article asked you to flip to page 57 where the last few sentences were supposed to reside. Several thousand turned, and several hundred wrote . . . "Where on Page 57 does it continue," or "On page 57 on what issue does it continue?"

Here it is. You won't believe how long it took us to find these 15 lines of type!

it back right to the end of the scale with the "SENS" adjustment.

If the noise level in your vicinity is high, making the meter read "S-3" or higher with no incoming signal, the "ZERO" adjustment can be used to cancel out the noise reading. After doing this though, you'll have to read-just the high end of the scale with the "SENS" adjustment as well. The "SENS" adjustment controls the length of meter needle travel; the "ZERO" adjustment moves the meter travel right or left across the scale.

Audio Ability — Continued

adjustable compression, audio input, audio output and output level. Also performs on receive to boost weak signal levels to a higher constant level. Three connections into transceiver. Available for 6, 12 or 110 volt operation. \$45.00.

P & H Electronics, Inc.

424 Columbia Street

Lafayette, Indiana

Audio filter-compression amplifier operating on AVC principle. Model AFC-1 has no power supply. Model AFC-2 has power supply, three position filter. Model AFC-2CW has sharper filters (narrowest 90-600 cps). Works on receiver line as well. AFC-1 is \$32.95. AFC-2, AFC-2CW is \$54.95.

SMEA Engineering

Tipton, Indiana

Clipper-amplifier with clipper control and audio output control. With built-in microphone element. \$39.95.

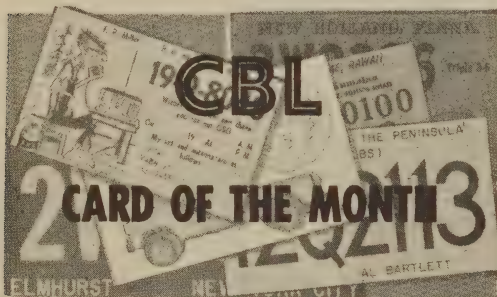
PASSING OF A CB GREAT

Many CB Horizons readers will remember the monthly column that was appearing one year ago at this time, 'Clyde's Corner'. Written by Clyde Moore, 9WO219, Clyde traveled the far reaches of the southwest and midwest gathering information on this and that of the CB world. Clyde was the original traveling editor in the CB world, a trend copied of late by a number of CB 'Vagabonds'. His style, his big Texas Howdy and his Chevrolet Greenbrier Station Wagon-Bus became a familiar site from Chicago to Houston.

On September 29th 9WO219, Clyde Moore, was killed when his single engine light plane, with he and his 12 year old son Rusty aboard, crashed into a field outside of his father's grocery store in Elmendorf, Texas. Clyde died instantly, his son was hospitalized for an extended period of time.

Clyde was many things for his 32 years. One of the earliest of CB'ers, a top notch pilot, a good writer and a man who wouldn't take no for an answer, the CB world in particular and the world in general must mourn his passing.

Ozzie



Effective this month we will be shortening up on the wordage on printing not only the winning card but also the two runner-up cards as picked by our evil eye judges.

Winner and recipient of the 12 month subscription to CB Horizons this month is Utility Service and Supply Company, Inc., operating KHG3419 of Monroe, Ohio. As the card says, the boys there specialize in Waterworks—supplies and equipment.

Runner-ups this month include KGH0895 and his XYL KGH3343 of Climbing Hill, Iowa (the Big Stinker and the Little Stinker) and Joe Davis, 10Q2938 of Lubbock, Texas. Joe's horse has a ball mount and spring on his left rear thigh and wears the earphones.

Joe holds out for the microphone, however.

Send along your card for next month's contest. "CBL of The Month, P.O. Box 1557, Oklahoma City 1, Oklahoma."

UTILITY SERVICE & SUPPLY, INC.
Specializing in Waterworks Supplies and Equipment
Ed, Gale, Jerry, Bob
MONROE, OHIO

KHG3419



10Q2938
LUBBOCK, TEXAS



BIG STINKER

SCENT FROM
THE HANE'S



LITTLE STINKER

Phil
KGH0895

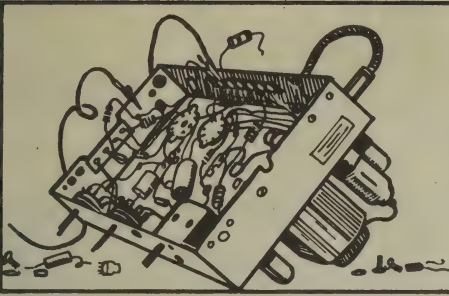
CLIMBING HILL
IOWA

Gale
KGH3343

SIoux VALLEY
C-B'ERS

MEMBER
OF

TRI-STATE
FLEA WATERS



TECH TIPS

FOR CB'ers

Converting the Exec 100-A to Sideband Reception

Want to be able to talk to the sidebanders who'll be appearing on the channels soon? It's simple, with a sideband adapter in your present transmitter.

Briefly, the sideband adapter allows you to receive a sideband signal. It makes no change in the *transmitting* portion of your unit—you'll still be sending standard AM. However, with an adapter installed you'll be able to receive either standard AM signals or the newer sideband variety.

At this writing, the only sideband adapter commercially available is the General unit. However, although it's designed specifically for their MC-5, it's adaptable to almost any set which uses a 455 KC intermediate frequency.

To see how such a hybrid installation would work, we put the General sideband adapter into an International Crystal Executive 100-A. Total time required was only about four hours—including the 2½ hours it took us to figure out just where to put what parts. You should be able to duplicate the installation in a single evening with time left over.

Results? Amazing is the only word for them. In the **SIDEBAND** position of the mode switch, we were able to make good copy of signals which we could barely tell were there when we switched to the AM position! Although it's not particularly recommended, since tuning is more critical, the **SIDEBAND** position can be used for copy of weak AM signals as well as for side-

band — and the results will surprise you.

If, by this point, you want to put the General unit into your Executive 100-A, here's how in step-by-step form:

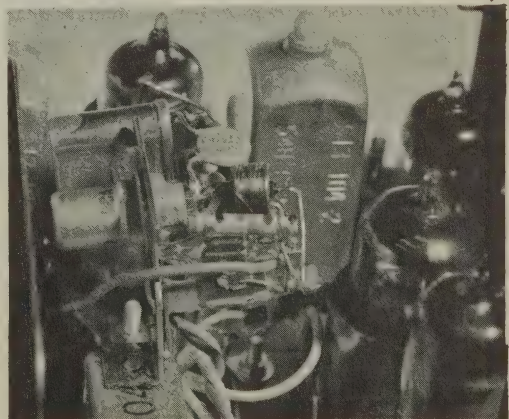
1. Unpack the General Sideband Adapter and make certain all parts are present.

2. Obtain a 270K ohm, ½ watt composition resistor.

3. Remove the Exec from its case by removing the six screws at the sides and the two screws and four mounting feet on the bottom. Unplug the power cord for safety's sake.

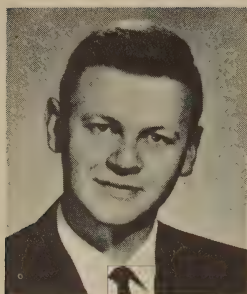
4. Remove the No. 4 machine screw from the mounting lip of the Sideband Adapter.

5. With a very hot soldering iron, tin the bottom of the Sideband Adapter mounting lip. (Note: We used an Ungar Super Hi-Heat tip, No. 4039, rated at 1000 degrees, and didn't have too much heat. Smaller irons won't do it!)



Mounting and placement of SB Adapter on Exec 100-A output transformer

Continued, Page 44



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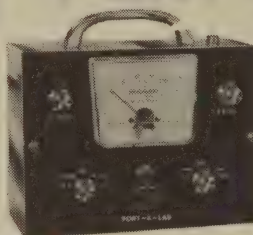
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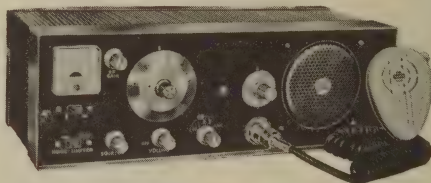
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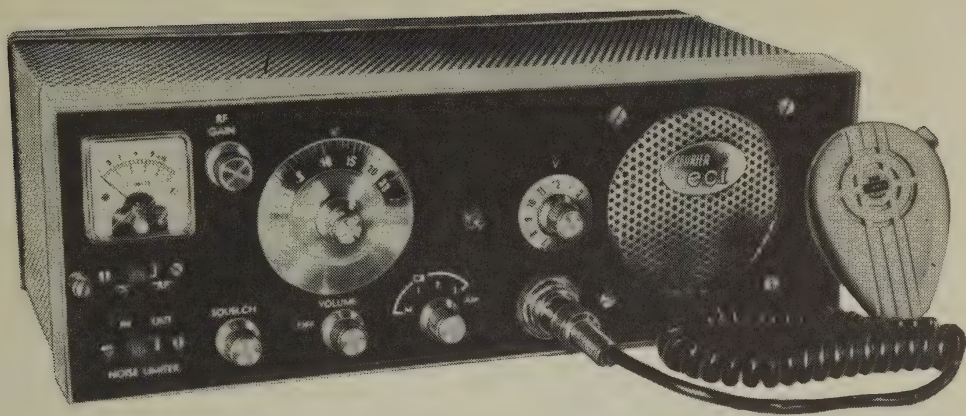
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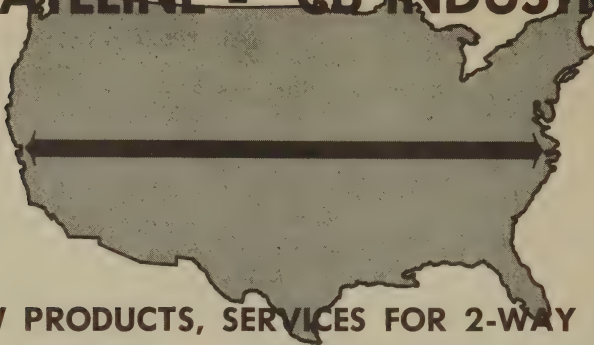
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DATELINE - "CB INDUSTRY"



NEW PRODUCTS, SERVICES FOR 2-WAY RADIO

The end of the year finds most manufacturers gearing for the spring months ahead. Thus the number of new items to be unveiled this month is understandably on the short side.

Antennas are in the spotlight. The kind folks at **Antenna Specialists** have come along with a single antenna that serves double duty for both Citizens Band and regular old-fashioned AM radio reception. Tabbed the M-103, the new dual purpose whip features an 'automatic dividing harness' that keeps your CB signals going to your CB transceiver and your AM radio signals going to your car's auto radio.



The antenna itself is designed to have the appearance of a conventional auto antenna of the AM variety with only a 'hint' of a loading coil. M-103 is center loaded, has a cowl mount and fits in the 7/8 inch—1 3/16 inch hole normally already on your car where the auto antenna is mounted. The whip is 46 inches high when fully extended, or it collapses to a mere 31 inches when not in use.

The automatic dividing harness fits under the dashboard out of sight. Only three simple connections are required for installation. The harness is also available as a separate accessory, M-104,

and will attach to any ungrounded CB antenna requiring no more than 5 feet of cable.

See this new CB-AM antenna at your nearby AS/P distributor-dealer.

Also out with a new CB-AM type unit this month is **Holstrom Associates, P.O. Box 8640, Sacramento 22, California**. Holstrom has their new DP-2 Coupler-Duplexer unit which allows you to use one antenna simultaneously for CB and AM. The Holstrom unit is along the same lines as the matching network portion of the AS/P unit just described. You provide the antenna. You feed the single antenna into the DP-2, and have two (twin) outputs from the unit. One output is for feeding your CB set, the other to feed your AM radio in the car. The DP-2 is a kit, with detailed instructions for construction. Holstrom says the unit provides maximum protection for the AM radio from the CB transceiver on the same antenna, and power loss is negligible through the unit on either CB or AM. Holstrom's unit is patterned after their model SK-1 RF pre-amplifier kit that so many of the fellows have added to their GW-1's and others. Price of the kit is \$4.99 each.

The **Radio Shack Corporation, P.O. Box 309, Boston, Massachusetts** (with stores throughout the northeast) has announced an 8 channel (crystal receive, transmit) transceiver that also features a 23 channel tunable receiver. Dubbed the TRC-8, this unit features a dual conversion receiver, 12/115 volt power supply, automatic noise limiter, tuned RF stage and built-in 'S' and 'RF' meter. Also featured is pi-network loading control and a plug-in provision for adding Monocall Selective Call.



The unit is available in either kit or wired form. The kit sells for \$98.96 and the wired version for \$125.96. Radio Shack features a special financing plan that allows you to purchase the unit for around \$6.00 per month. They also have the Monocall units available for around \$5.00 per month. Write them directly for full details.

Allied Radio Corporation, 100 N. Western Avenue, Chicago 80, Illinois has just released their new C-100 'Walkie-Talkie' kit. Priced at \$9.95, this is the lowest priced 100 milliwatt Part 15 unit to come along. Powered by a standard 9 volt miniature battery, it is hardly larger than a pack of cigarettes! It is housed in a high-impact blue case.

The unit is crystal controlled, has a built-in telescoping 40 inch whip, and requires about two hours of assembly time by someone who has no previous experience in electronic circuit wiring. Ranges up to 1/2 mile are possible in open-flat terrain.

The **Sonotone Corporation, Elmsford, New York** has achieved a nifty Magnet-Mount for their new model CM-30M and CM-31M ceramic CB microphones. The mike has a specially fitted magnetic back which allows the operator to 'drop', 'slide' or 'throw' (only kidding fellas!) the mike against the auto metallic dash after the transmission is completed. No more groping for a mike clip or mangled fingers. This of course eliminates the need for drilling holes for mounting a dashboard mounting bracket.

On top of the 'Magnet-Mount', the CM-30M and CM-31M mikes offer high sensitivity, and a frequency response of 60 to 7,000 cycles for maximum intelligibility under noisy CB road conditions.

CM-30M features push-to-talk at \$16.50 list price, and the CM-31M goes for \$16.00 without the push-to-talk feature.

For more information write directly to Sonotone and request spec sheet SAH-60C. This is quite a deal.

Here's something for our manufacturer friends. **Bramco Incorporated, College and South Streets, Piqua, Ohio** has designed a new five channel resonant reed relay for remote control functions. The RD-5 unit acts as a tone decoder, pre-set to five predetermined channels, any of which can be activated by a corresponding encoding tone. Response frequencies from 100 to 1,000 cps are available, and selectivity beyond the five basic channels can be expanded by using sequential or simultaneous tones.

The unit is compact (1-3/16 by 1-1/4 by 1-7/16 inches) and weighs only 1.5 ounces. Normal response time is 50 milliseconds.

And in snowbound Cleveland, the **Tenna Corporation** has opened a new plant and administrative office facility. If you want to find them now, look for the firm at **19201 Cranwood Parkway, Warrensville Heights 28, Ohio**. Tenna manufactures the CB-AM motor driven antenna as well as a number of others.

cated on a 32 acre plot new Lincoln. The new facility was expressly designed for engineering development and mass production of communications antennas. On the 32 acre site is a complete 7/8ths mile antenna test range where full size communications arrays are designed and field tested.

Hy-Gain's new address is Hy-Gain Antenna Products Company, NE Highway 6 at Stevens Creek, Lincoln, Nebraska. Stop by and see their new facility!

NEW CATALOGUE

A new catalogue devoted entirely to CB (and amateur) communications equipment is available from **Almo Radio Company, 913 Arch Street, Philadelphia, Pennsylvania**. This is quite a catalogue, and you can have your copy by writing directly to the firm in Philadelphia, or stop by at one of the Almo Radio stores in Pennsylvania, New Jersey, Delaware or Maryland.

MC JONES ELECTRONICS CHANGES NAME

M. C. Jones Electronics Company, a subsidiary of the Bendix Corporation, and a pioneer manufacturer of electronics devices, has moved its facilities and changed its name.

Effective December 1, M. C. Jones Electronics became Microwave Devices, Inc.

The firm has been manufacturing an SWR bridge and power meter for the 27 megacycle Citizens Radio Service.

Dear Ozzie—

I wish to inquire about **listening** to skip. When the little rig starts acting up with skip, we like to listen. Speak to them we can't, so just listen. During our business hours, CB is our working friend. We dispatch company trucks with it. Off hours when the skip comes in we like to take the time to jot down the calls and channels, look them up in your 'Q' and 'K' series Call-Books and send our CBL card. In this manner we have acquired 105 cards, 45 from out of New York. We know this is no record, but then we've only been around for 9 months. I want to know if it is legal to exchange cards in this way? If it is, how about setting up a nationwide CB Monitoring Club through your magazine? I want to take this opportunity to tell you how much we appreciate your magazine and that its many copiers come nowhere near its quality.

Robert Hindle, KBGO548
Brooklyn, New York

Bob:

Sending 'heard reports' with your CBL cards is a very fine way of making CB friends across the country. As long as you do not contact the stations on skip you are only doing what several thousand 'short-wave listeners' do every day, by sending those heard reports. We would be glad to look into such a club and regular column in CB Horizons. What do our readers say? Would you like a regular section devoted to CB Listening and card collecting, complete with awards for collecting cards from say all 50 states?

Ozzie

HY-GAIN HAS NEW PLANT

Hy-Gain Antenna Products Company, Lincoln, Nebraska, has a brand new expanded plant to better serve its CB distributors and customers. The new 25,000 square foot building is lo-



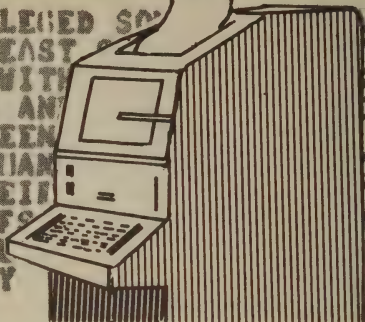
Write Your
Congressman
(and the FCC)
with your
Part 19
Comments
NOW!



RESPONSIBILITIES FOR BERLIN CAN BE LENDED IS BY A PLAC
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ET ASSERTIONS CONCERNING THE ALLEGED SO
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ADMINISTER EAST BERLIN FROM THEIR
WITHOUT THE FOUR MILITARY CHIEFS
OF THE RUSSIAN MILITARY REPRESENT
N REPRESENTATIVES AN OPPORTUNITY
VES "ON THE SCENE."

CB NEWS FROM WASHINGTON



R. N. Adams, CBH Man in Washington

WHY ARE LICENSES REVOKED?

Recent communiques to this office by CB Horizons' readers indicate that a substantial number of CB'ers object to seeing the call letters, name and address listed for CB'ers who come under direct citation and the ensuing license revocation of the FCC's field and monitoring force.

We couldn't agree more. No good is served by listing these violators, with the possible exception that it warns others that the FCC is deadly serious about Part 19 violations.

Nonetheless, revocations do occur. Let's see why five CB'ers lost their licenses this month.

The CB'ers involved (we won't identify them) were located in Pennsylvania, New Jersey, Connecticut and California (two here). In each case the Commission during April or May filed an Order to Show Cause with the violators. Each CB'er was given the opportunity to have a hearing and was thereby given a chance to explain why his offenses should not result in his license suspension.

Four of the five licensees failed to respond to official communiques from the Commission. In other words, four of the five were cited for alleged violations. Each of the four neglected to answer the Commission, in writing, within the specified time limit. The initial citations, says the Commission's Department of Public Information, were mailed between May 23, 1961 and

April 9, 1962. When the cited CB'er failed to respond to his citation of alleged rule violation, each CB'er received a second notice and then a third notice. The third notice included the information that if no answer was forthcoming from that notice, the Commission would, as allowable under Section 1.78 (c) of its general rules and regulations, terminate the proceedings.

In other words, four of the five CB'ers who lost their licenses did so because they did not answer official FCC communiques!

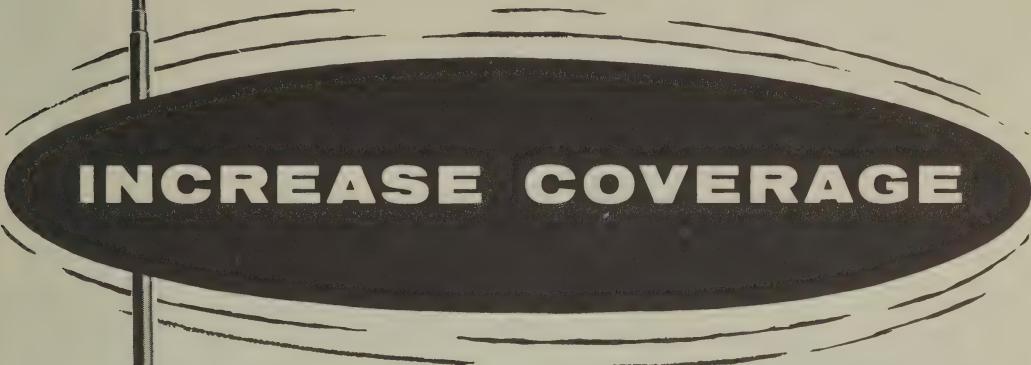
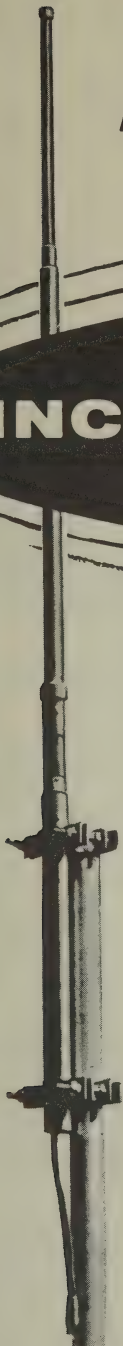
Why weren't these communiques answered? Perhaps the recipient did not realize the importance of answering the communique. Perhaps the CB'er was frightened by the receipt of the alleged violation notice and felt he was doomed anyhow, so why even bother with answering the notice!

Whatever the case, this is no reason why you should not answer such an FCC citation. And there is every reason why you should answer a citation.

A citation is a result of an FCC monitoring report. A citation results when the FCC tapes or records your station communicating in a manner not prescribed under Part 19 rules and regulations. Maybe they heard you talking too long. Maybe you were measured as off frequency (outside .005% tolerance) with your transceiver. Maybe they heard you calling skip. And maybe they didn't hear you at all, but heard someone bootleg-

MARK *Static Sheath**

***Eliminates Noisy Precipitation Static*...Improves Signal-to-Noise Ratio
Affords up to 20 db Operating Gain...Increases Receiver Sensitivity
Extends Intelligible Coverage. Easiest to install.***



INCREASE COVERAGE

MARK II SUPER BEACON FIXED STATION ANTENNA *with exclusive Static Sheath**

Design advantages of the new **MARK II** now make it possible to step up the efficiency of your CB operation, and maintain clearer communication over greater distances. 19 feet overall, the omnidirectional **MARK II** makes fullest use of the 20-foot legal length limit. Requires no radials or skirts. Provides 1 db gain over ground plane antennas. Employs a full half-wave radiator voltage fed through a special launcher-matcher cable section for excellent impedance match over the entire citizens band. Low angle radiation insures utmost efficiency and maximum contact with mobile units.

Improved mechanical features and extra-rugged base support pipe add to its reliability. Simplified clamp mounting makes installation easy.

Precipitation Static** is caused by charged particles in the air impinging in a continuous stream on metal antenna radiator surfaces. It is revealed by a continuous hissing background noise. The patented **Mark Static Sheath is a tough, durable, dielectric plastic covering that acts as an electrical insulator and eliminates static interference caused by the precipitation effect.

MARK HW HELIWHIP®* MOBILE and MARINE ANTENNAS *Top-Loaded, 50-Ohm Load...with Static Sheath**

Shortened mechanical structure and other Mark features bring new efficiency, new compactness, new convenience to CB communication. Molded Fiberglass, with Static Sheath.* Designed to replace lengthy stainless steel whips. Far superior to whip and loading-coil combinations. Can be located on upper portion of vehicle such as trunk lid, cowl, fender or hood to obtain proper ground plane. Single-hole mounting. 18", 3', 4' and 6' mobile models. Heliwhip Marine Antenna (6' long) eliminates need for metal ground plane.

**See Your B & K Distributor or
Write for Catalog HW19-CB**

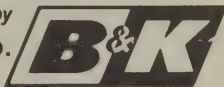
*U.S. Pat. 2,966,679
U.S. Process Pat. 2,938,210



MARK HELIWHIP®*

Another Fine Product Line by

B&K MANUFACTURING CO.
Division of Dynascan Corp.



Dept. CB-2 1801 W. Belle Plaine Chicago 13, Illinois

ging your call letters!

Whatever the case, a citation must be answered. They expect you to explain what you were doing at the time the citation alleges you were violating Part 19 provisions. For heaven's sake, tell them the truth. If you were working skip, admit it. And then promise not to do it again. And don't do it again! They won't take your license away if you do as we have outlined. They realize that temptation is there. All they ask is that you don't repeat your violation. Now, if you are cited a number of times for working skip, non-substantive messages or whatever, and each time you admit your wrong doing (or explain that you will correct the trouble, as in the case of being off channel or out of .005% tolerance), you can expect their patience with you to run out. It will, of that you can be sure, if you are a repeated and willful violator.

If they cite you for having an off-frequency crystal, get rid of it! And have all of your channels checked by a local licensed technician. It's a good idea to do so every six months anyhow, or whenever another unit reports you are "hard to copy" on crystal control receive, and that you sound "fuzzy and off channel."

If they cite you for other technical violations, such as excessive frequency deviation, too much modulation, or whatever, get the rig fixed. And most important, tell the FCC when you answer your citation that you have had the unit repaired.

The FCC field monitoring division is like a police force. They view your operational violations (working skip, etc.) much in the same way your town police force views speeding. In other words, you explain why you won't do it again, and they will be lenient with you. But, if you repeatedly violate the law, the local police force will see that the state lifts your driver's license. They

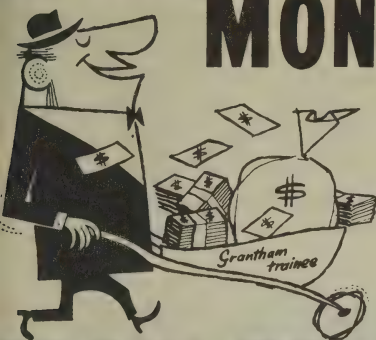
call this lack of responsibility. They simply don't feel you are qualified to hold a license to drive a car.

Technical violations, on the other hand, involve burned out headlights, in-operable horns and faulty brakes. Get the malfunction repaired, and they will probably let you off. Don't repair it, and they will certify the car unsafe to be used on the streets.

Now, what about the fifth CB'er who did reply to FCC communications, and still lost his license? This gent, in Pennsylvania, did not reply to the first two communiques of the Commission. When he received his third and final notice, and realized that he was about to lose his license, he answered the communique, and fast! In his answer he explained that he had been "confined to a hospital for an extended period of time and had not been able to repair his transceiver" which the Commission said had excessive frequency deviation from the required .005% tolerance. The Commission, however, took the time to check his hospital records, and learned that he was in the hospital for 13 days. However the period from the receipt of the first citation to the receipt of the third citation was nearly four and one-half months; not the 13 days he was in the hospital. So the Commission ruled that although there might have been mitigating circumstances which would allow special consideration of the case, they were not convinced that his actual disposition in and out of the hospital was extensive enough to invalidate the Commission's obligation to carry out enforcement of Part 19. Correspondingly the license was revoked.

Write Your
Congressman
(and the FCC)
with your
Part 19
Comments
NOW!

MAKE MORE MONEY



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In RESIDENT CLASSES

Grantham *resident* schools are located in four major cities—Hollywood, Seattle, Kansas City, and Washington, D. C. Regularly scheduled classes in F. C. C. license preparation are offered at all locations. New *day* classes begin every three months, and new *evening* classes begin four times a year. The day classes meet 5 days a week and prepare you for a first class F. C. C. license in 2 weeks. The evening classes meet 3 nights a week and prepare you for a first class license in 20 weeks. For more information about the Grantham *resident* schools, indicate in the coupon the city of your choice and then mail the coupon to the school's home office in Hollywood, Calif. Free details will be mailed to you promptly.

Get your First Class Commercial F. C. C. License by training at

GRANTHAM SCHOOL OF ELECTRONICS

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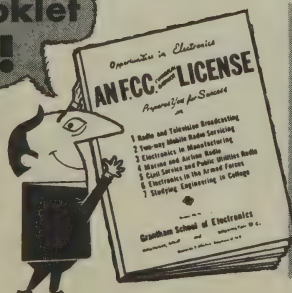
SEATTLE

KANSAS CITY

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This booklet **FREE!**

This free booklet gives details of our training and explains what an F. C. C. license can do for our future. Send for your copy today.



for **FREE** Booklet **CLIP COUPON** and mail in envelope or paste on postal card.

Through HOME STUDY

Grantham training is the easy way to learn more quickly—to prepare more thoroughly—for F. C. C. examinations. And your first class license is the quick, easy way to prove to your employer that you are worth more money.

This correspondence course is directed toward two major objectives—(1) to *teach* you a great deal about electronics, and (2) to prepare you to *pass* all of the F. C. C. examinations required for a first class commercial operator's license. We teach you step by step and have you practice with FCC-type tests which you send to the school for grading and comment. You prepare for your F. C. C. examinations under the watchful direction of an instructor who is especially qualified in this field.

GET your first class commercial F. C. C. LICENSE

To get ahead in electronics—first, you need the proper training; then, you need “proof” of your knowledge. Your first class commercial F. C. C. license is a “diploma” in communications electronics, awarded by the U. S. Government when you pass certain examinations. This diploma is recognized by employers. Grantham School of Electronics specializes in preparing you to *earn* this diploma.

Grantham training is offered in resident classes or by correspondence. Our **free** booklet gives complete details. If you are interested in preparing for your F. C. C. license, mail the coupon below to the School's **home office** at 1505 N. Western Ave., Hollywood 27, California—the address given in the coupon—and our free booklet will be mailed to you promptly. No charge—no obligation.

for **FREE** Booklet **CLIP COUPON** and mail in envelope or paste on postal card.



To: **GRANTHAM SCHOOL OF ELECTRONICS**
1505 N. Western Ave., Hollywood 27, Calif.

Please send me your free booklet telling how I can get my commercial F. C. C. license quickly. I understand there is no obligation and no salesman will call.

Name _____ Age _____

Address _____

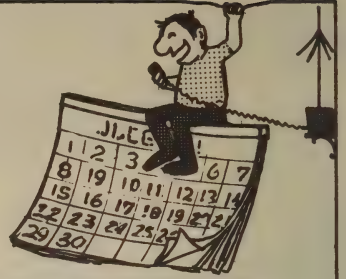
City _____ State _____

I am interested in: ☐ Home Study, ☐ Kansas City classes, ☐ **30***

☐ Hollywood classes, ☐ Seattle classes, ☐ Washington classes



CITIZENS BAND DATEBOOK

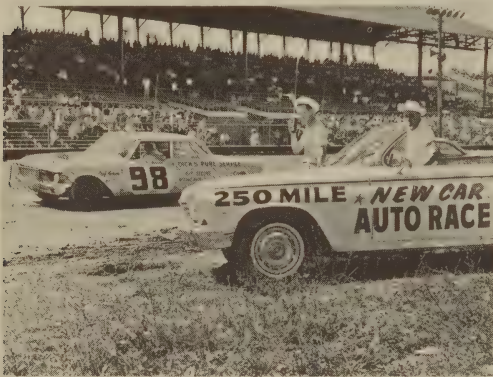


A SERIES OF IN DEPTH REPORTS ON CB'ERS ACTIVITIES FROM COAST TO COAST.

STOCK CAR RACING WITH CB

A two-way radio dealer up in Detroit makes the most of his home town's number 1 products—automobiles.

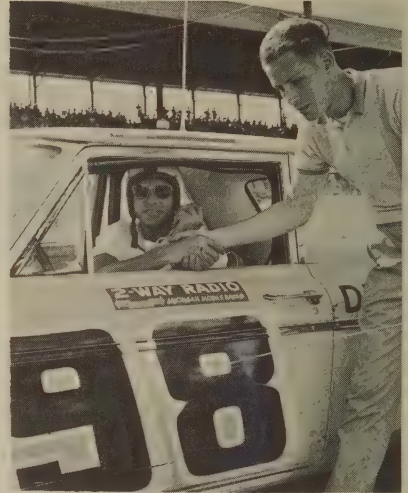
Jack Frankford of Michigan Mobile Radio, Inc., 19515 Livernois Avenue, Detroit reports on a novel use of CB that proved both effective and likely to catch on around the country.



At the start of the race Newland (in the Ford) and Michigan Mobile President Frankford (with the hand held unit) complete a final communications check-out before the pace car (right) starts things rolling.



You might not take your grandmother for a Sunday drive in this Ford, but then Newland probably wouldn't want to put your new car on the race track either. Note TWR-2 installed where most such radios are installed—under the dash in the center.



After the successful race Newland and old 98 accept congratulations from Frankford . . . or is it the other way around!

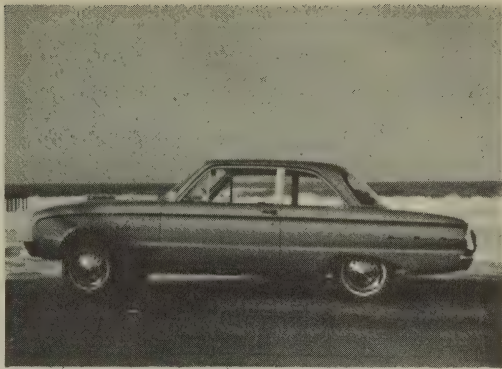
Utilizing four TC-900 hand-held transceivers and a pair of Raytheon TWR-2 units, Frankford worked with Homer Newland of Detroit, a well known stock car driver, to keep Newland going at maximum speed, with maximum safety, at all times during the race. Newland, driving old number 98, was radio equipped in his two-tone Ford, with a TWR-2 unit, operating on channel 17. With Frankford standing by to advise Newland of track conditions ahead, four helpers spotted themselves around the track with the TC-900 hand-held transceivers. The spotters reported in as cars jockeyed for position, and as accidents and danger spots developed.

The hand-held units were on channel 7, the TWR-2's on channel 17. Frankford reports this worked to perfection

as driver Newland was not bothered by idle chatter. Newland, meanwhile, would advise when he expected to make a pit stop, and what repairs the pit crew should have ready.

WELL EQUIPPED MOBILE COMPACT

W. L. Hodgson, 1312 18th Street, San Francisco, California (12W0784) is one of the earliest of CB'ers in the northern part of California. Bill's interest in CB stems from his belief that two-way radio can be of considerable service to highway travelers. Consequently, he he has outfitted his 61 Ford Falcon Futura as a highway emergency unit. In addition to the transceiver in the car, 12W0784 carries a hand-held transceiver unit. Other 'standard' equipment packed into the vehicle at all times include cameras, tape recorder, first aid kit, flares, flashlight, fire extinguisher, blanket, rope, plastic jugs, water, two yellow slow signals, two red blinking lights . . . and . . . much too much to detail here. The entire kit contains nearly 70 pieces and weighs in at about 100 pounds. Bill doesn't say so, but we



expect there is plenty of roof left over for the passengers. Anyone desiring information on the 12W0784 operation should contact Bill directly, not CB Horizons.

**WHAT OUR READERS ARE SAYING . . .
ABOUT PART 19 PROPOSED CHANGES**

Across the nation CB'ers, CB clubs, CB dealers and CB manufacturers are reacting to the Federal Communications Commission's proposal to redesign Part 19 rules and regulations (see page 10, January 1963 issue of this publication).

The proposed changes were announced on November 15th. The first opportunity the manufacturers had to get together was November 28-December 2 at the International Com-

**THE ANTENNA IS
HALF YOUR
Communications System**

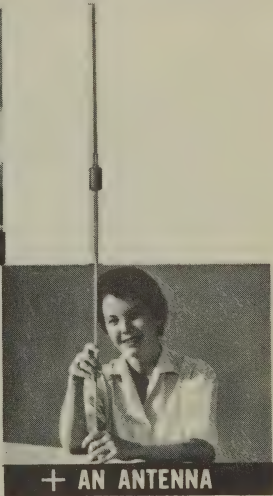
**You'll Enjoy an Extended,
Clear Operating Range with the
Mileage Maker, Jr.**

Here's the antenna that offers an improved signal-to-noise ratio (as much as 20db) increasing operating gain and receiver sensitivity. The conductor is in the center of the 54" reinforced fiber glass rod for maximum protection and durability — center loading maximizes radiation resistance and efficiency. Visit your dealer, or write — today!

FG54CL	Mileage Maker, Jr.	\$15.85
FG102CL	Mileage Maker	18.95
LCF	Base loading coils for stainless whips	6.65



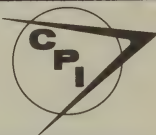
A TRANSMITTER



+ AN ANTENNA



= A PERFECT PAIR



**CREATIVE
PRODUCTS INC.**
6944 Plainfield Rd.,
Cincinnati 36, Ohio
Phone 791-0030



New Cadre '510' 5-watt citizens band 2-way radio

**Highest Power Allowed • Excellent Selectivity
Completely Transistorized • Maximum Reliability**

Press the switch and you're on-the-air with the cleanest 27 Mc "talk" power possible—5 watts. Reach vehicles and base stations instantly, dependably... up to 20 miles away. Perfect contact assured by 5 crystal-controlled transmit/receive channels.

Release the switch and the sensitive receiver circuit—a dual-conversion superheterodyne—captures weakest signals and reproduces them crisply and clearly.

HIGHEST SELECTIVITY prevents adjacent channel interference; electrical interference is virtually eliminated with an effective automatic noise limiter. Standby reception is noise-free, too, thanks to adjustable squelch.

100% SOLID-STATE DESIGN—Here's the most reliable maintenance-free CB transceiver. Fully transistorized—26 transistors and diodes—it operates safely all day. No tubes to burn out. Lowest current drain prolongs battery life. Solid-state components absorb road shocks without damage.

EASIEST TO INSTALL—The 3½" height of the smallest, full-power CB radio fits most anywhere, never steals leg room in a vehicle. And it can be used anywhere—mobile, fixed, field, marine craft—with its built-in dual 12VDC/110-220VAC power supply. Add a portable pack accessory (model 500-1) with rechargeable batteries for the lightest, portable 5-watt radio.

Cadre '510' 23-channel manual tuning, dynamic microphone, matched set of crystals, universal mounting bracket, AC & DC cords... \$199.95. **Cadre '515'** same features as 510 less 23-channel manual tuning... \$187.50

See your Cadre distributor for a demonstration, or write:

CADRE INDUSTRIES CORP.

Commercial Products Division, Endicott, N.Y. • Area Code 607, 748-3373

Canada: Tri-Tel Assoc., Ltd., 81 Sheppard Ave. West, Willowdale, Ont.

Export: Morhan Exporting Corp., 458 Broadway, New York 13, New York

munications Fair in New York City. We'll have more to say about that later, and what transpired there.

Another group of manufacturers met at the IRE's Disneyland, California meeting of the Vehicular Communications Section of that group. Although the California show did bring together a number of manufacturers with explicit interest in CB (such as RCA, KAAR, General Radiotelephone, Hammarlund, Antenna Specialists and others), the show's purpose was a much higher level of sophisticated two-way communications, covering the VHF range through the microwaves. Thus nothing formal was proposed in California.

As noted in our Editorial (See **Channel 24**, this issue), the first major comment came from The Heath Company, Benton Harbor, Michigan. They are in favor of the proposal.

Another early manufacturer to file a comment was The Webster Manufacturing Company (APELCO), South San Francisco, California. In their comments, APELCO President Ben Ballard said (in part) "We believe the proposed change limiting communications between units of different licensees to five channels only, i.e. channels 12, 13, 14, 15 and 23 would place a severe restriction on the use of Citizens Band equipment for other than in-system communications."

Ballard continued "... (while) it is true that the Citizens Band service, as originally conceived did not take into account casual communications between different licensees resulting from the monitoring of a 'common' channel such as 11.

... the enthusiastic public endorsement of Citizens Band Radio, backed up by cold cash purchases of CB equipment during the past few years, has made it very evident the public wants and is willing to pay for equipment permitting casual communications between different licensees. Further, this enthusiasm is easily translated into terms of community benefits:

"It provides the grass roots civil defense communications (that are) both spontaneous and inexpensive. It provides emergency communications for a wide variety of conditions ranging from flat tires to floods.

"It provides for an entry into the study of radio itself. Many licensees, having been exposed to electronics in this innocuous way, go on to secure their novice and general (class) ham tickets. Many of the younger ones eventually make a career of electronics."

Ballard also noted that all of this enthusiasm for electronics has indeed brought into sharp focus an area of direct conflict between the personal and business users of Citizens Band Radio. He suggested a method of allotting channels where each type of user (i.e. personal or business) would have at least an equal representation on the 23 channels, with perhaps 11 allotted to one use and the remaining 12 channels allotted to the second type of use.

On the CB Club level, the comments of Walter Boggs, President of the Fifth District CB Radio Association, Inc., Kannapolis, North Carolina was typical. Said Boggs, "The response of this district is one of great opposition to these changes. It is the opinion of many that if these changes go through CB Radio will gradually die."

Alan R. Nicewander, Secretary of the Midland Empire CB Radio Club, Billings, Montana erupted in a similar manner. Nicewander and his 80

member club group prepared an official comment (with all 15 copies signed, sealed and delivered as required by the Commission) and circulated copies not only to the group's 80 members, but also to all CB'ers in Montana they could reach.

The comment 'protested' the limitation of inter-licensee communications to 5 channels; the prohibition of transmissions concerning technical performance and social or personal affairs; the prohibition of attaching phone patches to CB transceivers; the prohibition of working skip, ad infinitum. In general the Montana group called for a continuation of the broad interpretive powers of the present day Part 19 user and was against a change in the present Part 19. It ended with, "As A Citizen of the United States, I protest the violation of my rights."

Explaining his petition comments, Nicewander noted "If we are not to lose all of our Citizens Band Radio rights and the very reason why we spent so much money for our CB rigs, every CB'er in the United States must act immediately to protest. If we put it off, if we fail to lodge our personal protest with the FCC (and in 15 signed copies from each of us) then we can blame no one but ourselves for the suppression of Citizens Radio or its end."

On the dealer level, Donald Parrott of Mountain Radio and TV Systems, Idaho Springs, Colorado had these things to say when he filed his comments. "Certainly something should be done to protect the rights of those unable to send necessary messages due to interference from those who are abusing the privilege of CB radio,

and we agree with your basic approach of allocating certain channels for each type of message, inter-licensee and intra-licensee. BUT you are imposing UNREASONABLE RESTRICTIONS on inter-licensee communications. Why did you decide that these messages were not as necessary as the other type (5 channels proposed as against 18 channels proposed) and that they would not take as long to convey (3 minutes as against 10 or more)?

"You appear to be gearing your rules for the FEW LARGEST CITIES at the disadvantage of the residents of the smaller ones. Contemplating the time when monetary fines will probably be imposed for violations, we would certainly be disturbed at being fined for talking 3 1/2 minutes conveying a necessary message on a inter-licensee channel that was **not** busy."

Parrott continued "The mere fact that the Service has grown indicates that the Taxpaying Citizens of this country have a NEED AND DESIRE to use the service. Isn't it the responsibility of the Government to fulfill this need?"

"... Last of all you have **completely ignored** the result of the cooperation of millions of CB'ers ... (in the) establishment of channel 9 as the calling channel. You are taking away their proudest achievement, doing your worst at public relations, destroying the CB'ers morale and confidence in your agency. LET'S KEEP NATCH 9!"

The Hagerstown, Maryland unit of REACT filed their comments on behalf of their 25 members. They objected to the 5 channel proposed restriction for inter-licensee communications pointing out that in their area the business users utilize channels 3, 4, 5, 7, 14, 15, 17 and 21,

THE BEST IS NOW BETTER!

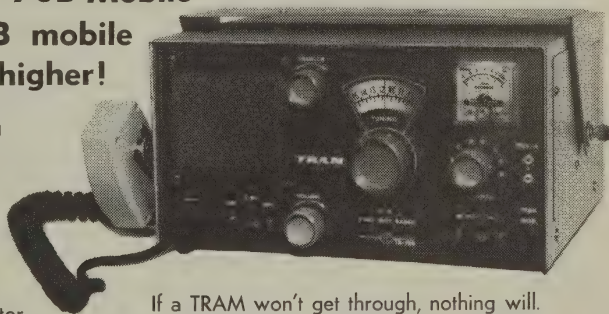
TRAM introduces the TR-70B Mobile and the standards for CB mobile operation are now even higher!

The mobile that outdistanced everything on the market has improved!

Improved:

- Transistor Power Supply
- Series Gated Noise Limiter
- "S" Meter and Relative RF Output Indicator
- Universal Mounting Bracket
- 8 Transmit / Crystal Receive positions
- Front Panel Transmit Crystal Socket
- Two Improved Tube Types for even Finer Performance.

As well as standard TRAM Features and Performance! 70% or better Transmitter efficiency provides 3.5 watts guaranteed minimum RF Output with 100% High Level Modulation.



If a TRAM won't get through, nothing will.

Receiver performance is legendary -

Sensitivity - .1 uv. for 300 milliwatts of audio
 Selectivity - 5 kc. @ 6 db. Adjacent channels 60 db. down
 Signal to Noise Ratio - .3 uv. for 10 db.
 Incredible weak signal readability-plus the unmistakable signs of Quality.

To hear from TRAM by return mail, write for detailed information and specifications.



TRAM ELECTRONICS

P. O. BOX 187, DEPT. A, WINNISQUAM, N. H.

and that the personal users use 2, 9, 11, 18 and 22, through an apparently mutually agreeable set-up. The Hagerstown REACT group noted "We feel this section is unfair and business people who are bothered with other stations should take advantage of the Business Radio Band available to them" (Note: See September and December 1962 issues of CB Horizons for the story on Business Band Radio). Hagerstown also took exception to the proposal to limit output of transceivers to 3.5 watts. And they said about Section 19.63 (4) "This section seems to limit freedom of speech, even if it is on the air. We can see (understand) the prohibited use of religious or political discussion or comment, these have no place on the air. But why social? There are real needs for social air, when a person has spent a large amount of money for his mobile unit and has only this means of communication with his friends, and then if this proposal is passed, he is left with a radio he might as well junk. We feel that the social restriction is unfair and against the freedom of speech as we were given (allowed) before the radio was invented."

On proposed section 19.62 (13) Hagerstown commented "What is the member who only has a mobile unit and no house unit to tell him if he has a set that is not operating (to do) . . . ? . . . the only way to find out if your unit is operating with peak efficiency (is) through contact with another (base) unit of a different call sign."

On 19.66 (d) Hagerstown wrote "Why the limited time on talking to another station of a different call sign? We have heard and answered mobile units requesting information and 3 minutes are not enough to give proper directions and information to a stranger. We feel this section should be the same time limit as units working under the same call sign."

A letter to CBH by Kurt Pietrowski, 16W3737 of the Twin Ports Mobile Emergency Unit in Duluth, Minnesota read in part "We appreciate having received your EXCLUSIVE news-scoop in regards to 'FCC TO ANNOUNCE PART 19 CHANGES'. A change such as this has been a long time coming. The so-called 'goof-offs' asked for it and now it is here. An organization such as ours will be hurt quite a bit by the restrictions (if) imposed, especially by the one which (would) limit the communication between units of different licensees. **We have even thought about disbanding and selling our equipment and getting out of CB altogether.**"

In the light of cooler day, we feel certain the Duluth group will not be so hasty to 'get out of CB altogether'. But this type of impact on CB groups was not unusual.

On the 'verbal side of the coin' we heard from a manufacturer who asked that we consider the following major points arguing for a continued Part 19 or continued Citizens Band as we now know it.

"The creation of the Class D Citizens Radio Service has done more to create new amateur radio operators than anything in the history of hamdom. Any amateur or amateur group which still looks down on CB as a breeding place for 'ill-gotten gains' had better look at his own ham ranks and see what it has done for him!"

"The creation of the Class D Citizens Radio Service has inspired more young people to get interested in electronics, as well as inspiring more national interest in electronics on all age levels, than anything in our history."

"The creation of the Class D Citizens Radio Service has done a great deal towards tying small groups, communities and people in general into a more tightly knit local, regional or even national community than anything our nation has ever been able to inspire . . . " short of war.

"The creation of the Class D Citizens Radio Service has allowed the sloppy-grossly over-exaggerated Civil Defense program to extend down to a local level, even a block by block level, like nothing that has ever been said or done . . . " war included.

As noted earlier, the manufacturers of CB equipment have formed an emergency organization as a result of the Part 19 proposal. The organization's first big job is to tackle the Part 19 problem, and then they will be turning their attention to other areas.

The organization is known as the **Communication Equipment Manufacturers Association**, or CEMA for short.

It formed in New York at the International Communications Fair when many of the manufacturers were present to exhibit their products. The members of the association, as we go to press, are as follows: Browning Laboratories, Cowan Publishing Company, Crater Lake Antenna Company, ECI, General Radiotelephone Company, The Hallicrafters Company, Hammarlund Manufacturing Company, The Heath Division of Daystrom, Horizons Publications, Inc., Hy-Gain Antenna Company, Metrotek Electronics, Inc., Osborne Electronics, Pierce Simpson, Polytronics Labs, The Sampson Company, Ten-Four Magazine, Tram, Utica Communications Corp. and Ziff Davis Publishing Company.

The present officers are John Artesani (President), Metrotek, Frank Lester (Vice President), Hammarlund, Gar Greene (Vice President), Browning and Dick Salem (Secretary-Treasurer), Utica.

The group, on December 21st, filed a petition with the FCC requesting an extension of the January 15th comments deadline and January 30th reply-comments deadline through April 15th for the comments and April 30 for the reply-comments.

In the petition, the group pointed out that the total dollar investment in CB radio exceeds \$50 million in their estimation, and that this money represents a considerable amount of investment by the 'citizen.' The group feels that the proposed changes in Part 19 are sufficiently detailed and complicated as to change completely the present usage of Class D radio.

The extension of the comments deadline is sought so that the group can adequately study the proposal and develop alternate proposals which they feel will not be so harsh on the present and future day users of Class D radio.

CEMA plans a meeting of its members in early February should the extension be granted at which time an alternate proposal will be drawn up and filed with the Commission.

More comments and details in the March CB Horizons.

new! Hammarlund CB-23



\$229.50
complete

REVOLUTIONIZES CITIZEN BAND CONCEPTS!

- Crystal-Controlled 23-channel RECEIVE
- Crystal-Controlled 23-channel TRANSMIT
- NO EXTRAS—Every crystal, push-to-talk microphone, cables and mobile mounting bracket included in **ONE LOW PRICE**
- ± 3 KC Receiver Vernier Tuning Control (No effect on transmitted frequencies)
- Dual Power Supply—Mobile or Base Station—12V DC—117V AC

Hammarlund's CB-23 really goes all the way. It provides you with crystal controlled stability on 23 channels—receive or transmit—with the added facility offered by the ± 3 KC Receiver Vernier Tuning Control. This amazing transceiver has every feature you have ever wanted in a citizen band unit. Peak "Talk-Power," dual conversion super-heterodyne receiver, noise limiter, adjustable squelch, and built-in S-meter to indicate relative rf transmitter output plus strength of the received signal—built-in... at no extra cost.

The CB-23 is ready to go—Just add an Antenna and you're "On the Air"

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SB Adapter, from Page 29

6. Scrape the insulating varnish from the inner corner of the top of the Exec's audio transformer (see photo). Then, with the same hot iron, tin this corner well.

7. Sweat-solder the Sideband Adapter mounting lip to the tinned portion of the audio transformer. See the photo for exact positioning of the Sideband Adapter.

8. Route the twisted green and yellow wires from the Sideband Adapter under the adapter to the front edge of the Exec's audio board. Solder the yellow wire to the connector which already has a yellow wire attached. Solder the green wire to the connector which already has a pink wire attached to it. Leave both original wires connected.

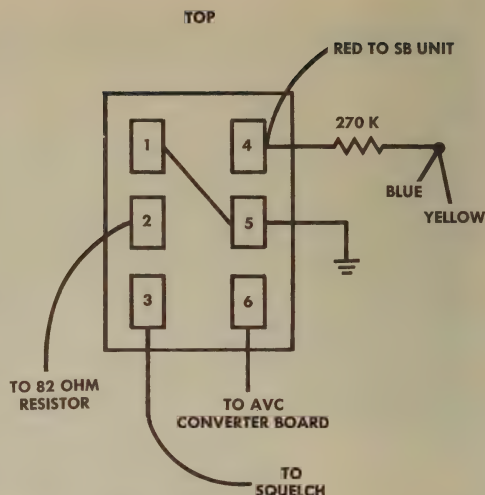
9. Remove the type 6BA6 if amplifier tube from the Exec. Remove the insulation from one end of a 3-inch length of hookup wire and wrap the bare wire around pin 1 of the 6BA6. One turn around the pin next to the glass bulb is sufficient. Replace the tube in its socket, making sure the hookup wire does not short to the shield.

10. Connect the free end of the hookup wire (step 9) to the free end of the 22 pF capacitor (red-red-silver item looking somewhat like a super-short resistor) on the Sideband Adapter.

11. Route the long red wire from the Sideband Adapter next to the large metal shield plate and under the tuning capacitor, to the neighborhood of the "CALIBRATE-OPERATE" switch.

12. Remove all connections on the back of the "CALIBRATE-OPERATE" switch. Twist the blue and yellow wires together. Remove the other three wires completely by clipping them at their other ends. Save them as they will be used later.

13. Connect the 270K resistor (step 2) between the junction of the blue and yellow wires (step 12) and terminal 2 of the switch (see sketch). Solder junction of wires; do not solder switch terminal.



14. Cut the red wire from the Sideband Adapter to length and connect to terminal 2 of the switch. Solder.

15. Connect a bare piece of hookup wire from terminal 1 of the switch through terminal 4 and extend to nearest available ground lug. Solder all three places.

16. Take the brown wire removed from the switch in step 12 and connect one end to terminal 6. Solder.

17. Route the brown wire in front of the tuning capacitor, through the shield, to the AVC terminal on the converter board. This terminal is the second from the outside edge, and has a black wire connected. Wrap the free end of the brown wire around the connector and solder. Leave the black wire in place.

18. Connect one end of the white wire removed in step 12 to terminal 3 of the switch and solder.



Connection to 82 ohm resistor (center)

19. Locate the 82-ohm second if cathode resistor on the if amplifier board (see photo). Color code is gray-

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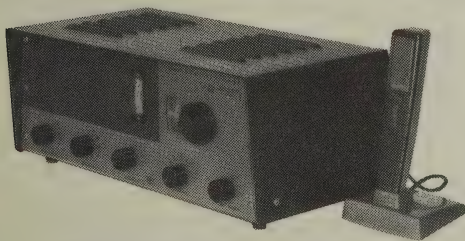
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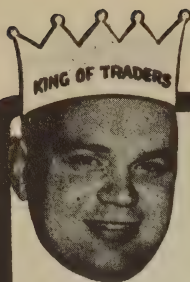
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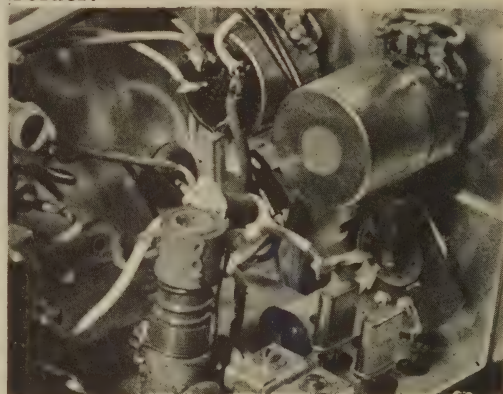
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red-black. With small sidecutters, clip the outer lead of the resistor as close to the board as possible. Be sure you leave at least 1/16 inch of lead on the resistor itself so you can solder to it.

20. Connect the free end of the white wire (step 18) to the now-free end of the resistor. Solder.

21. Connect a 5-inch length of hookup wire to terminal 5 of the switch. Solder.

22. Route the hookup wire along the same path used in step 17, to the SQUELCH control. Connect the free end of the wire to the center terminal of the SQUELCH control (see photo) Solder.



Squelch (upper center) showing added wire

23. Turn the chassis upside down and locate the 120-ohm filament-current-balancing resistor in the center. It is connected between a pink and a yellow wire, on a terminal strip near the center of the chassis. Clip out this resistor.

24. Plug in power cord and turn set on. Set "CALIBRATE-OPERATE" switch to "OPERATE". Set should operate normally.

25. Set "CALIBRATE-OPERATE" switch to "CALIBRATE"; turn "VOLUME" control all the way up; turn "SQUELCH" control all the way down. Set should be completely quiet.

26. Turn "SQUELCH" control up, slowly. You should hear a slightly tinny hissing sound Tune across the band Every signal you hear should have a high-pitched whistle, which changes pitch as you tune.

27. Without changing settings, tune carefully on a moderately strong sig-

Continued, Page 52

CITIZENS COMMUNICATIONS



REPORTS INVITED: All reports appearing in the CCM section are contributed by CB Horizons readers. Readers are asked to check page 8 of this issue for the address of your regional Citizens Communications Manager, and to forward all club papers, reports of activities, photos, etc. directly to that reporter-CB'er. If you do not see a reporter listed for your call-region, why not write for information as to how you can be a participant in this project! And, if you do not have a CCM in your region, forward your reports directly to CB Horizons, Attention: Jamie Jones, KEG3290.

First District-KBA/KBC

The Tri-County Emergency Communications Net, Inc. (Portsmouth, N.H.) has become a tax exempt organization. They recently had an invite from the 'Port City Amateur Radio Club' to attend one of their meetings. Gordon Wilke, Chairman of the New England CB Council, is talking of holding a CB jamboree next year. The Bristol County CB Radio Club of Rhode Island has joined the REACT organization sponsored by the folks at Hallicrafters. They now have 15 units ready for duty. A fire at Hog-Island caught the residents isolated without telephone service. A CB call to a unit in Bristol notified the Portsmouth Fire Department, under whose township the fire district falls as the fire was spreading from one building to a large area. They responded with a Duck Fire Boat and with the help of the local coast guard confined the fire to one major house loss. Many of the CB'ers in New England are taking out their Third Class Radiotelephone operators permit. Classes in amateur radio are being given in the Swansea, Mass. area with many CB'ers taking the course. The Newport, R.I. club held a rummage sale and all reports are it turned out very well. Let's have your reports. **Seth Pauli, 1W1717.**

Second District-KBG/KBI

The South Jersey Citizens Radio Club, Inc., Stratford, N.J. was treated to an early presentation of the new Part 19 proposals when their November 21st meeting was attended by featured speaker Joseph Welch of the FCC. Mr. Welch spoke on the new proposal, why they were proposed and how they will be enforced. An editorial in the fine club paper of the same group (P.O. Box 99, Stratford, N.J.) covered the problems of getting Civil Defense approval for CB participation from club members. The fact that the newly proposed Part 19 changes actually have a section pertaining to CB in CD should help out considerably. Two burglars using a CB Walkie-Talkie to keep in contact in Philadelphia were nabbed when CB'er Elmer W. Handshew picked up their transmissions. Handshew called police who quickly picked up the culprits. Crime and CB radio mixed together simply doesn't pay!

Third District-KCC/KCD

The Delaware Valley Citizen Band League of Philadelphia and vicinity is holding a contest to name their monthly club paper. The first month's winner was Joe Bosi who nominated the name 'The Chatterbox.' Two more monthly contests will be held and a winner picked from the three monthly winners. The Burlington County RACES is still looking for a CB transceiver for use at their base station in Mt. Holly. Ed Yoos says it will become his personal responsibility to see that the unit is kept in safe keeping if some distributor or helpful CB'er would like to start the new year off right with a good turn. Charlie Kostenack, 3W2460, has a slug of Delaware League CB Club bumper stickers for those members who haven't picked theirs up yet. The same group has a new **crystal bank** project whereby members put crystals into the bank and they will be sold at \$2.00 each. The club will keep \$.50 for the club treasury for the service, and the selling member will get \$1.50 for each crystal sold. A good idea. Herb King, 3W4098, continues his excellent series on transceiver repair and maintenance in the November issue of the Tri-County Citizens Radio Association publication, by describing CB transceiver receiver alignment. Ed Wolfgang, KCC0011, was the featured CB'er in the club's November issue. The Keystone 11 Meter League had 8 members complete a Red Cross class on November 20th. That's 8 more CB'ers equipped to cope with emergency medical situations.

Fourth District-KCF/KCG

The Hagerstown Unit of REACT has grown from the original 12 charter members to over 25 mobile and 13 base stations. This unit has received considerable publicity in the local paper and has been offered for utilization to the area coordinator for Civil Defense. Headed by CBH Maryland Staff Member Jim Cross (KCF0823) and coordinators Russ Rhinehart (KCF1492) Bruce Campbell (4W2480) and Ken Michael (KIC1265) REACT of Hagerstown is growing into one of the finest CB organizations in the area. Some of the random comments from CB'ers in the 4th Call District on the proposed changes in Part 19. "Would require most REACT and club members to purchase new crystals," "Most business users in the 4th district are on channels 3, 4, 5, 7, 14, 15, 17 and 21, while those channels utilized for communications with stations of different calls are channels 2, 9, 11, 18 and 22." "Why limit social conversations from the airwaves? We can see the limitation of political or religious, but the social contacts on CB form the backbone of CB radio. We feel this is unfair and infringes on freedom of speech." What do the rest of you fellows think? Let's have your comments! **Jim Cross, KCF0823**

Fifth District-KCI/KCJ

The Bladen County Civil Defense Headquarters in Elizabethtown, N.C. invited all of the CB'ers to join in an effort to supply short range communications in time of need on a voluntary basis. A very good attendance showed the local CD people that they could count on CB to back them up to the hilt. The group is meeting on the air Monday evenings at 7:00 PM. The Greensboro, N.C. Citizens Band Service Unit has recently completed a mobile radio trailer built on an old boat trailer. The emergency station is complete with a 50 foot antenna mast, electric panel board, 6, 12 or 115 volts power, and the trailer can be hooked to any members' car. The trailer has been used to demonstrate

what CB is and how it works by attending openings of shopping centers, etc. where the public gathers. As a result of this project the club reports nearly 100 percent attendance at recent meetings, so high is member interest. Woodrow Wilson, Secretary for the Greensboro group (call 5W2205) is responsible for this report. **Tom Farah, 5Q1951.**

Sixth District—KDB/KDD

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Eighth District—KEA/KEB

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Ninth District—KED/KEE

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in Fontana and Don Ruggles in Yucaipa. Anyone else interested in joining the staff of this progressive group's paper are invited to write in care of 256 W. Highland Avenue, San Bernardino. The club monitors channel 9 and then asks members to switch to other channels for carrying on conversations. A new CB Club is forming up at Big Bear Lake. Most of the business users there are on CB and even the Sheriff's department uses channel 1. Local calling channel there is 11. The Citizens Band Association of Southern California, down San Diego way, reports approximately 50 turned out for their November meeting. The SCCBA meets at the University Heights Community Center at 4044 Idaho Street in San Diego. Contact Cliff Morris (KEJ3300) at P.O. Box 17296, San Diego 17, if you are planning to attend a meeting, and get the full story. This is one of the finest clubs in the nation, with a really top notch paper!

Thirteenth District—KFF/KFG

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Fourteenth District—KFI/KFJ

The Apple Capitol 5 Watt Association met at the residence of Edmund W. Fechner, 14Q0497, on November 27th. New officers were elected, and they include Edmund W. Fechner, 14Q0497, as President, Homer Neely, 14W1866, as Vice President, and Jack Crowder, 14Q0995 as Secretary-Treasurer. The President read the changes in Part 19 as proposed, and as received from CB Horizons, and there was discussion on the subject. We are looking forward to having regular reports from some of the Seattle CB Clubs, as well as CB'ers in northern Idaho and Montana. How about it fellows? **Fern Fechner, 14Q1295.**

Seventeenth District—KGH/KGI

The Five County CB Club is newly formed in Scott, Finney, Hodgeman, Ness and Lane Counties, Kansas. Lee Dechant, President, of Box 173, Dighton, Kansas, reports the membership started with 47 CB'ers in attendance. A December 6th meeting featured a lively discussion of the Part 19 proposed changes as received from CB Horizons. Club officers are Lee Dechant, 17W7071, President, George Harmonson, 17W3333, Vice President, Ernest McVicker, 17Q1676, Treasurer. Channel 11 is monitored in Dighton.

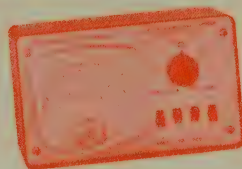
Eighteenth District—KHC-D/KHA-B

The Citizens Band 'Sunday Club' at its November 18th meeting elected Richard Scott, 18W6747 of Indianapolis as its President for the new year. The 'Sunday Club' is an organization of CB Radio operators that meets on the third Sunday of each month. They have 51 members at present. Interested CB'ers wanting to join the club or find out about it are invited to call Henry Kingdon at ME 4-6437 in Indie. The Iowa-Illinois CB Radio Club is now boasting 185 members with plenty of visitors at all meetings. During the cold months ahead the club will be meeting at the NCO Club on the Rock Island Arsenal. During the summer the club meets with picnic meetings. Members come from Davenport and Bettendorf, Iowa, Rock Island, Moline and East Moline, Illinois. Meetings are held the 3rd Sunday at 2:00 PM. On November 18th the club elected new officers, which include Fred Benson, 18Q4302 of Moline as President and Ed Tyrrel, 18A8439 of Moline as Vice President. One of the largest man-hunts in the history of CB radio was sounded at Cloverport, Kentucky November 14th. A 3 year old lad strayed from home around noon. A call was put in to Cloverport and Hawesville for help, and then a call went out to the Owensboro Civil Air Patrol. The Kentucky and Indiana Citizens Band League joined with the CAP and a number of well manned units reported to the Clover-

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The Triangle CB Radio News, of Winston, Roseburg and Sutherlin, Oregon reports that the club bus is progressing steadily. KFF0020 and KFF0154 have been putting in hours replacing the old (!) glass with new glass. Clubs within the state of Oregon are beginning to get together 'over the passes' and 'through the valleys'. The Curry C.B. Radio Association of Gold Beach, Oregon recently reported it has grown from 6 original members to 30 at the present time. The Gold Beach group has been very active providing emergency communications from their CB rig installed as a base at the Civil Defense building. They have participated in several fires and in one instance when a fire threatened part of the town the phone lines became jammed and the sheriff's radio gave out. From then on, until 3 AM the next morning, it was CB radio all the way proving again what a worthwhile communications asset we have.

Fourteenth District—KFI/KFJ

The Apple Capital 5 Watt Association met at the residence of Edmund W. Fechner, 14Q0497, on November 27th. New officers were elected, and they include Edmund W. Fechner, 14Q0497, as President, Homer Neely, 14W1866, as Vice President, and Jack Crowder, 14Q0995 as Secretary-Treasurer. The President read the changes in Part 19 as proposed, and as received from CB Horizons, and there was discussion on the subject. We are looking forward to having regular reports from some of the Seattle CB Clubs, as well as CB'ers in northern Idaho and Montana. How about it fellows? **Fern Fechner, 14Q1295.**

Seventeenth District—KGH/KGI

The Five County CB Club is newly formed in Scott, Finney, Hodgeman, Ness and Lane Counties, Kansas. Lee Dechant, President, of Box 173, Dighton, Kansas, reports the membership started with 47 CB'ers in attendance. A December 6th meeting featured a lively discussion of the Part 19 proposed changes as received from CB Horizons. Club officers are Lee Dechant, 17W7071, President, George Harmonson, 17W3333, Vice President, Ernest McVicker, 17Q1676, Treasurer. Channel 11 is monitored in Dighton.

Eighteenth District—KHC-D/KHA-B

The Citizens Band 'Sunday Club' at its November 18th meeting elected Richard Scott, 18W6747 of Indianapolis as its President for the new year. The 'Sunday Club' is an organization of CB Radio operators that meets on the third Sunday of each month. They have 51 members at present. Interested CB'ers wanting to join the club or find out about it are invited to call Henry Kingdon at ME 4-6437 in Indie. The Iowa-Illinois CB Radio Club is now boasting 185 members with plenty of visitors at all meetings. During the cold months ahead the club will be meeting at the NCO Club on the Rock Island Arsenal. During the summer the club meets with picnic meetings. Members come from Davenport and Bettendorf, Iowa, Rock Island, Moline and East Moline, Illinois. Meetings are held the 3rd Sunday at 2:00 PM. On November 18th the club elected new officers, which include Fred Benson, 18Q4302 of Moline as President and Ed Tyrel, 18A8439 of Moline as Vice President. One of the largest man-hunts in the history of CB radio was sounded at Cloverport, Kentucky November 14th. A 3 year old lad strayed from home around noon. A call was put in to Cloverport and Hawesville for help, and then a call went out to the Owensboro Civil Air Patrol. The Kentucky and Indiana Citizens Band League joined with the CAP and a number of well manned units reported to the Clover-

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port 10-20. Soon word was spreading throughout the two state area and by 10:30 PM nearly 3000 (That's right—three thousand!) people were at the 10-20 armed with Walkie Talkies, search lights and other search and rescue apparatus. The United States Army sent planes loaded with a field hospital and food supply. The stores at Cloverport and Hawesville sent food and fuel for the light plants. Within 90 minutes the boy was found safe and sound, taken to a hospital for a check up, and returned home. Citizens Band radio had proved once again that these are not toys, and that we were able to muster nearly 3,000 CB'ers from a 150 mile radius within a matter of minutes and hours. Your CCM would like to start compiling a list of clubs, meeting dates and monitoring channels for the 18th district. How about it club secretaries throughout the 18th? Dawson Springs, Kentucky has formed a CB Club and started out with a big get-together. The Corn Belt CB Club held a gala dinner on November 17th with CB'ers from as far away as Dallas, Texas, and New Castle, Pennsylvania showing up at the central Illinois meeting. 168 CB'ers and their friends and family turned out, many from more than 100 miles distance. President Glen Mays of Normal, Illinois reports he was very pleased with the event. **Ralph Combs, 18B1711.**

Nineteenth District— KHG-H/KHI-J

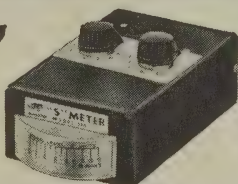
The Vulture Valley CB Club of Crawford, and Roscommon Counties, Grayling, Michigan had a social get-together at the Grayling Sportsmans Hall on November 24th for the benefit of the deer hunting CB'ers in the area. Present were CB'ers from all over Michigan and several CB clubs were represented. The officers present were President Les Hunter, 19B0842, Secretary Treasurer Art O'Conner, 19W5419, and Vice President Veryl Gulirik, 19W4205. The proposed Part 19 revisions, as forwarded from CB Horizons to this reporter, were read to the group and a very interesting discussion followed. It was announced that the VVCBC will plan another CB deer hunters meeting for the next deer season. Hope to see you there next year. The 11 meter CB Club of Roseville, Michigan had a very successful dance on the night of December 1st. A nice crowd showed up for the successful evening. The Citizens

Radiophone Association of Detroit held their annual election of officers December 3rd. New officers are President 19Q8146, Wayne, Vice President 19A5442, Oscar and Treasurer 19QA0864, Jim. The Part 19 proposed changes were read at the meeting and a very 'hot' discussion followed. Don Ludwig expressed a very great interest in the changes, and anyone wishing information can contact Don at 3306 Kanter, Detroit 11, Michigan if you want to know how the discussion turned out. All clubs and CB'ers . . . place your CCM on the mailing list for the club paper and send me your news! **Vincent L. Cuker, 19W9224.**

Twentieth District—KIC/KID

The first annual banquet and election meeting of the Chenango County Citizens Band Radio Club was held at Lewis' Restaurant in Shelburne November 24th. Over 50 members and guests were present. The new slate of officers elected are President Bud Mohr, KIC0922, Vice President Al Evans, 20W4913, Secretary Les Cooper, Jr. KIC3968 and Treasurer Tom Ellison KIC2290. The basic purpose for forming the club in Chenango County one year ago was to provide assistance to the Chenango County Sheriff's office in emergencies, offering communications both base and mobile as well as the assistance of the members. Some of the members are deputies for the Sheriff's department. Sheriff Joseph Benenati is a license holding member of the club himself, 20Q4675. Inquiries are invited from anyone wishing to learn more about the club. Contact Bud Mohr at Box 141, Oxford, New York. Hamilton County is the largest county in New York state, but located as it is in the Adirondack Mountains, it is also the most sparsely populated. Via CB Radio, the entire county is just about covered by two-way radio. The CB'ers in the county recently joined together into a club known as the Hamilton County CB'ers. The local monitoring channel is 11. LeRoy Weaver, 20Q0623 is the President of the club, and he invites interest from others in the area in care of his Mt. Pleasant, New York 10-20. The Citizens Radio Club of Rochester, New York, at their November 29th meeting, elected the following officers for the coming year. President is George Greene, 20W1853. Vice President is Dave Ferguson, 20W4270. Treasurer is Gay Louth, 20Q2568 and Secretary is Ruth Louth, KIC2972. Under heavy discussion was the Part 19 proposals. Most members

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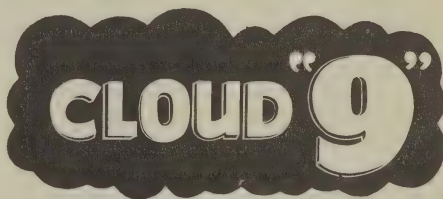
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agreed that limiting inter-licensee communications to channels 12, 13, 14, 15 and 23 was rather drastic. If nothing else these channels are clobbered by other services including diathermy on 12-15. The selectivity of most transceivers is such that in populated areas you could only use channels 12, 14 and 23 or 13, 15 and 23, making two of the 5 at least useless. The Citizens Band Club of Rochester suggests that if this must go through, at least make the five channels 5 channels that are not clobbered with interference, and space them with an intermediate channel between them. The Niagara Falls Civil Defense Unit is operating a standby monitor 18 hours a day on channel 20, according to the Niagara Frontier Citizens Band Club Newsletter.

10-7

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10 COMMANDMENTS FOR STARTING A CB CLUB IN YOUR AREA

Mrs. Bobbi Steele, 3Q2736
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1. **ORGANIZATION MEETING:** As with the weather, which everyone talks about, perhaps the idea of a CB club in your area has been very popular, but no one has done anything about it. *Now is the time!* Take your coffee pot in hand and invite those individuals whom you know want a local club to your house to start the ball rolling. Supply them with pencils and paper and then start brainstorming.

2. **MEETING PLACE:** This will be one of your primary concerns, as in-

dividuals soon find the cost of renting a commercial place prohibitive. Don't be afraid to ask people for ideas. You might try county or township buildings which are usually free. Also, inquire about fire houses, ambulance halls, or other organization's buildings. These usually charge a fee, but it may be lower if you intend to have a non-profit service organization.

3. **TIME:** If you belong to any other organizations, you will know what their usual meeting times in your area are. If not, and you intend to hold meetings at night, set the time between 7:30 PM to 8:30 PM. This allows interested parties time to eat, spruce-up, and get there on time.

Adapter, from Page 46

nal until the beat note becomes lower and lower and finally disappears. Audio should sound normal. Note that very small motions of the tuning dial in this area result in changes in the pitch of the voice. You are now receiving only the lower sideband of the AM signal being transmitted, by what is known as "exalted-carrier detection". The same tuning technique is used for sideband signals except that the beat note will not be present.

28. Turn off power and replace Exec chassis in case.

IN CASE OF TROUBLES

Although we had no trouble at all with this conversion—a rarity among conversion attempts!—there's always the chance that you might run into a problem or two along the way.

If the set comes up totally dead in either position of the mode switch, check to see that the wire added to the 6BA6 in step 9 is not shorted to ground.

If the set operates in both positions but no whistle is produced in the side-

band position, check voltages at the end of the red wire in the Sideband adapter.

If the set operates in both positions and the whistle is present but audio seems garbled, turn down the "SQUELCH" control. In Sideband position, the squelch is inoperative and this control adjusts the receiver's gain. Too much gain results in garbled signals. The control will probably require readjustment for every different incoming signal.

If all operates well but volume seems to be low, nothing is wrong. In AM transmission, only one quarter of the maximum output power (at best) is effective talk-power. The result is low volume when sideband receiving techniques are used. Volume will be more than ample when receiving a sideband signal.

WRITE YOUR CONGRESSMEN (and the FCC)

with your Part 19
Comments NOW!

4. **DATE:** Word of mouth polling is the only solution for the first meeting. Pick the day which the majority of the interested CB'ers are free. If this works out well, keep that day. If not, try picking a certain date such as the 15th of each month for a meeting. A certain day, such as the second Wednesday of each month, will allow your members to plan their other weekly activities around club meetings, but particularly when there are a lot of business men in the group, picking a date works better.

5. **CHAIRMAN:** Select a chairman from the group of organizers by a majority vote to preside over the first meeting. This individual should be a good speaker, a leader and organizer since chances are that he will probably be president for the first few months until an official election is held. Beware of a popularity contest, because the best liked personality is often too easy-going to control a meeting.

6. **MEMBERS:** Your membership may be all male licensed CB'ers or any licensed CB'er (which will include a smattering of XYs) or simply any interested local members of the populace. My own organization works on the basis of the last suggestion. Women CB'ers are a breed apart from any other type of club woman and the older (over 18) teen-ager is one of the most enthusiastic members you'll ever have. These two types of potential members will more than prove their worth when it comes to daytime channel monitoring, paper work, and committees which tend to be boring for men.

7. **PUBLICITY:** This is all important to a successful first meeting. CB'ers must be made aware of the fact that it will happen. Send news releases to local newspapers, magazines, radio stations, and national CB publications stating the time, date, place and agenda of the first meeting. Word of mouth will not suffice in this case since you will only draw the CB'ers you already know. Advertise for the strangers to attend and the club will profit by their membership and new ideas.

8. **COMMITTEES:** Be prepared to appoint committees at your first meet-

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ing. This will give you the feeling of of having accomplished something and will give the organization a start. Allow for some volunteers on each committee. If publicized properly, many of your members will be strangers, and you will soon learn of their talents.

9. **ORGANIZERS:** Be sure you are at the first meeting early. Have name tags handy on which to write the individual's name and call letters and have them pin them on their jacket or blouse. This will aid in helping everyone to get acquainted and will help you to connect call letters and names to faces. Introduce yourself to each person by name and call letter and go out of your way to make the strangers feel at home. You'll be surprised at how many new faces will appear in the crowd.

10. **REFRESHMENTS:** This is a minor part of the evening's fare, but will aid in getting the newcomers acquainted with everyone and help to distinguish between the social and business part of the club's activities. If there are no facilities for refreshments

at your meeting place, shop around for an inexpensive eatery that will welcome your group after its meeting. At the close of the evening, suggest that everyone adjourn to the diner or whatever for a cup of java. Now you have accomplished the major step of beginning a club. Keep up the good work!
(To Be Continued)



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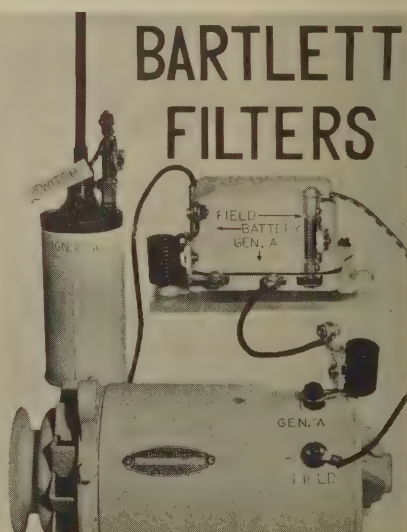
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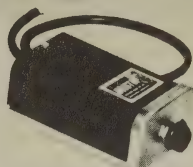
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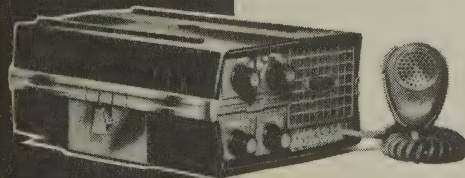
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FEEDBACK

The December issue of CB Horizons carried a Lab Report on the Tram TR-70 transceiver. Tram Electronics, Inc., Box 187, Winnisquam, New Hampshire advises that this model per se' is now being closed out in favor of a new and improved version, the TR-70B. Both the TR-70 and the 'B' series units operate from 6 and 12 vdc, not just 12 vdc as stated in the review. And, the Tram base unit is actually a pair of units, the TR-27C and the TR-27B.

SEIDEN SOUND, INC.

335 Central Avenue, Albany, New York

We stock Eico, Hallicrafters, Hammarlund, Johnson, Lafayette, Philmore and Vocaline transceivers. Antennas—AS/P, Lafayette, Mark Mobile and Master Mount. 9:00 to 5:30 daily, Mon., Thurs. & Fri. 'til 9:00 PM. 2A3819 on channel 11.

LAFAYETTE RADIO ELECTRONICS ASSOCIATE STORE

6306 Beach Blvd., Buena Park, Calif.

We stock Lafayette and others in radios and antennas. 9-9 on Mon. and Fri., 9-6 other days, closed Sundays. Present call 11W1682, new call coming. We monitor channels 1 and 9.

AMATEUR ELECTRONIC SUPPLY

3832 West Lisbon Avenue, Milwaukee 8, Wisc., WE 3-3262

6450 N. Milwaukee Avenue, Chicago 31, Ill., RO 3-1030

23 Azalea Park Shopping Center, Orlando, Florida, 277-8231

HARRIS RADIO CORPORATION

289 N. Main Street, Fond du Lac, Wisc., WA 2-4670

SWAN ELECTRONICS, INC.

342 North Gallatin St., Jackson, Mississippi

We stock Hallicrafters radios and AS/P and Hy-Gain antennas. 8:30-5:30 Mon. thru Fri. 8:30-12:00 Saturdays. 8Q1695 on channel 8

ARROW SALES, INC.

7035 Laurel Canyon, North Hollywood, California

We stock Hallicrafters transceivers. Antennas—AS/P and Hy-Gain. Our call is 11W7153 on channel 11 and we are open 9-9 six days per week, Sundays 10-4.

PENINSULA ELECTRONIC SUPPLY, INC.

656 South First Street, San Jose, Calif.

We stock Kaar-D-Phones, Johnson Messenger. Antennas—AS/P and Newtronic. Our call is KFC0669 on channel 11. Open six days per week.

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2763 Bellewood St., Ann Arbor, Michigan

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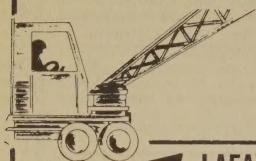
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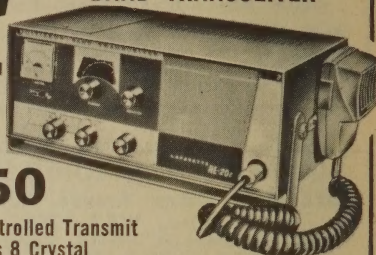
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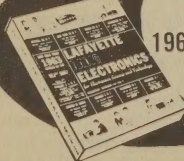
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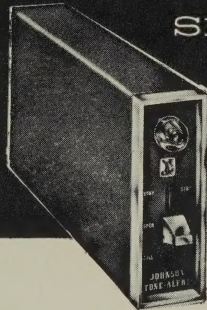
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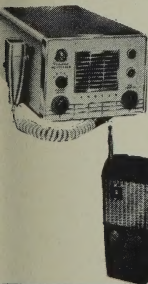
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- 10 channels at flip of a switch — illuminated indicator!
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5 CHANNEL "MESSENGER" TRANSCEIVER . . . Now at a new lower price, the big seller in the CB field! Excellent sensitivity and selectivity — punches out a powerful signal! "Squelch" circuitry.
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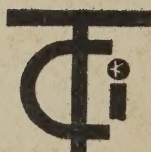
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